

THE NATIONAL
HORTICULTURAL
MAGAZINE

The NATIONAL
HORTICULTURAL
MAGAZINE



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The American Horticultural Society

A Union of The National Horticultural Society and The American Horticultural Society, at Washington, D. C. Devoted to the popularizing of all phases of Horticulture: Ornamental Gardening, including Landscape Gardening and Amateur Flower Gardening; Professional Flower Gardening and Floriculture; Vegetable Gardening; Fruit Growing and all activities allied with Horticulture.

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[See page 132]

The National Horticultural Magazine

B. Y. MORRISON, *Editor*

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Contributing Editors

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It has often been remarked that in midsummer the gardener who has worked so valiantly through the spring seeks out the shady tree, either literally or figuratively, and allows time to go by unheeded. Various excuses are made for this inactivity, but has any one ever offered the reaction from the plethora of flower shows as an excuse for later idleness? Surely after the frenzy of management which is required on the part of the committees one might reasonably expect the harried members to want both quiet and repose, qualities of good garden art which do not often have a chance in the exhibition rooms. But whatever excuses may be offered, surely all must be considered valid, when the terrific heat and blazing sunlight fill the midsummer world and make exacting physical labor seem far from one's desires.

But whatever excuse one must offer for midsummer idleness, however flimsy it may appear in the cold light of necessity, every gardener should practice it in the garden to the extent of meditating on the present state of his accomplishment. To sit quietly, even in the drowsy heat of a July afternoon and let the mind and eye play quietly over the garden scene, filling up the spaces that have yet to be filled, observing critically the slow development of the garden picture and deciding as carefully as possible whether or not the slowly forming garden picture is fashioning itself to your heart's desire, is far from sloth.

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From an Arabic Farm and Garden Book

BY HELEN M. FOX

For centuries our education was molded by the church and generation after generation was taught the source of all learning and beauty was Greek and Egyptian, which had been transmitted through the Romans and thence handed down through the church. We only learned about Chinese, Indian, Persian, or Arabic art and philosophy when we left school and were old enough to go out and search for ourselves.

The fine art of Hispano-Arabic gardening and agriculture which took its roots in Mesopotamia and travelled thence along North Africa to Spain was unknown to Western Europe and most of North America. How much of this agriculture and gardening was carried to Mexico and California by the Spanish missionaries can only be determined by disentangling the Spanish practices in the agriculture of these regions from the practices inherited from the American Indians.

When the Arabs came to Spain in the eighth century they found an old civilization which had been established by the Romans on the foundations of still earlier ones of the Greeks and Carthaginians. The mingling of all these with the lore of the East produced the exquisite culture in the ninth and tenth centuries which made the courts of Cordoba, Seville, Granada and other petty rulers veritable beacon lights in the dark ages of European history. Cordoba was renowned for its mosques, baths and libraries, and was visited by the learned men and women of all lands. However, this beautiful civilization after its rich flowering faded away helped along by various causes. Fortunately the writings of Ibn Al Awam escaped the bonfire lit by Cardinal Ximenez when he burnt 70,000 manuscripts to celebrate

Christian victory over the Mohammedan Moors.

"The Book of Agriculture" by Ibn Al Awam has been translated twice that I know of, by Banqueri and by J. Clement-Mullet into French. This last edition was published in Paris in the years 1864-66 in three volumes. Ibn Al Awam was a gentleman-farmer and an authority on horses, farming and gardening. The portion about horses, I have been told, is still authoritative in Spain to-day. As for his agriculture and horticulture most of it is remarkable. Like all writers on scientific subjects, he quotes liberally from other sources. He, too, knew Dioscorides, Theophrastus, and the Roman farmers quoted *ad infinitum* by the writers of Germany, France and England down into the seventeenth century. In addition he gives us several hitherto unknown sources, amongst them Ibn Washiah, who had written a compendium of Arabic, Chaldean, Persian and Egyptian practices which Ibn Al Awam calls "Nabathean." Moreover, what makes his books so valuable and so utterly delightful is that Ibn Al Awam farmed and experimented himself and records his observations. While reading him we are transported to that far away time and country and walk in his garden, smell his roses, his violets and acacias, and see the gardeners irrigating, cultivating and transplanting.

We go with him into his vegetable garden where he grows amongst others, onions, asparagus, melons and cucumbers, and hear how they are prepared and seasoned for the table. In fact, we can follow the daily life of this country-gentleman almost as if he were living to-day.

In Ibn Al Awam's time the gardeners knew how to force plants; they had

green-houses; they protected their plants from the spring frosts by smoke, as California orange growers do to-day; and they knew eight kinds of grafts, how to prune, and the art of manuring and dry farming. They believed that watermelons should be planted in the ascendancy of Mars, and the vine in that of Jupiter and Venus. And this it seems has a scientific basis, for I have been told we are just beginning to see there is truth in what the Arabs knew thousands of years ago, namely, that germination is affected by the phases of the moon.

I have translated a few passages from the French of Clemont-Mullet to give an idea of the delights of this book. My selections are about flowers, but the book deals with the whole subject of agriculture; with field crops, fruits and nut farming, vegetable growing, and flower culture under which come fragrant plants for distillation. There is a delightful chapter on landscape gardening and one volume is devoted to animal husbandry. This is the way the book begins:

Prologue

"In the name of the kindly and merciful God in whom is all my trust. The author of this book, the illustrious sheik Abou Zakaria Iahya Ibn Mohammed ben Ahmed Ibn Al Awam, to whom may God be merciful, says: 'Praise to God the master of the worlds.'"

"Of the Althea-Khetmie.¹ According to Ibn Al Façal, an Arab author, Khetmie is the Khabizi; it is a downy plant; when the green parts are crushed, they furnish a foamy liquid used for lotions for the head. There are many varieties of khetmie; it is a plant of the plains; many say that when the ground is well cared for the Khetmie grows very well but that it should be mixed in with other plants.

* * * * *

¹I think this is Althea frutex, now known as *Hibiscus syriacus*, or Rose of Sharon.

According to Ibn Al Façal and others this plant likes manure and new soil. The seeds are sown in beds or in pots;² in little holes as deep as the thickness of a finger; in each of these holes from two to five seeds are placed and covered with manure. The plantation should be near running water so as to be easily watered until the plants have started to grow; then the seedlings are thinned until those remaining are a cubit³ apart.

According to Nabathean Agriculture⁴ the Khetmie has a tall stem; it can be grafted on to the apple; it is best planted in September.

If you like you can transplant them into the gardens in the low portions and close to the course of the waters. There are two kinds of Khetmie bushes, one with large red flowers and the other with white ones smaller than the red. The Khetmie likes hard dry gravelly soil, but always wants lots of water at its feet. Storms and rains are good for it; however, drought is not absolutely fatal. The Khetmie is sometimes attacked by a sickness called "the redness." The cure for it is to bathe the leaves with fresh water towards the middle of the day and water besides; do this for seven days, twice a day and the disease will disappear:

According to Nabathean Agriculture the people are assured that if they gaze at the leaves of the Khetmie not detached from the plant, the spirit is refreshed and sad thoughts disappear. If the eyes gaze at the Khetmie for a long time while one is standing, that is to say if one strolls around the bush of the Khetmie constantly keeping one's eyes on the leaf and flower and never removing them as one moves around the bush, for the duration of an hour, one will obtain a feeling of joy, of well being, and of satisfaction, and the soul will be strengthened. If one wishes to remove the honey from the bees without the

²Seeds are grown in pots in Spain to-day.

³Arm's length.

⁴That is Ibn Washiah.

dread of their stings or the pain of them, one should take the flower of the Khetmie powdered and soak the powder in olive oil then rub it on the hand and any part of the body one wishes; the bees will not touch any of these parts or do them harm.

AS REGARDS STOCKS

The seed-bed of the stocks can only be cared for by a man who is pure and clean, who has outgrown his youth and does not frequent women. One should attend to all matters having to do with the culture of the stocks while the moon is crescent. A very advantageous process for the stocks is to spread the powdered manure of the she-goat at its feet after watering it and then pour water on it again; this produces a stronger and more pronounced fragrance. Another method of fertilizing is to take pulverized cow manure mixed with pulverized humus; one does not give it in large amounts but lightly every seven or twelve days; powdered ashes are very good. This is how one proceeds: The plants, stems and seeds are pulled out when they are ripe, they are thoroughly dried and then burned; the ashes are collected and mixed with a little warm powdered humus. The best way of all is to use powdered cow dung and earth alternating with ashes every five or seven days.

CULTURE OF THE BASIL⁵

One reads in the Nabathean Agriculture that there are three varieties of the badiroukh.⁶ One is called "caryophyllum"; it has a spicy odor like that of the stock; it is planted from the first days of March to the end of April. * * * The sowing is done by spreading the seed on the surface of stagnant water in the beds; twenty-four hours later, the water having been drawn off, one puts some humus over the seeds. Al Makoul says that the

⁵*Ocimum basilicum*.

⁶A variety of basil.

⁷I found this in Parkinson.

Prophet said, "Houk, admirable plant! Houk! admirable plant, it seems to me I see it grow in paradise." He liked this plant to the point of admiring it. Another tells how, according to his companions, he said, "Houk, plant of happiness, plant aromatic and with an agreeable taste," etc.

The Basil *caryophyllum*, called *karismaschak*, resembles exactly the *origanum*; its leaves are covered with a fine down. According to Abou'l-Khair this variety of basil is the best and most fragrant. It is used in perfumed medical preparations and others. It has not the elegance and beauty of form one sees in other varieties on account of the down which covers its leaves and because of its awn.⁸

The citron Basil,¹⁰ which is the *badirandjou*, has the odor of citronella; the leaf is as wide as a thumb, veined on the under side and covered with a light down which is like dust; this plant is a favorite of the cats, who like to roll over in it.

CULTURE OF THE LAVENDER, AL-KHOUZAM OR AL-KHAZAMI

* * * * *

This is how the Khouzam is cultivated. It is a plant which bears one flower whose petals are separate; it is violet, of a far finer shade than the violet. The stem rises to the height of a man, oftener it is lower. Many branches grow out from the stem. * * * The Persians praise it highly and regard it as an object of benediction; they say if you look at it a long time your soul will experience joy and that it drives away grief arising from an unknown cause. * * *

THE CULTURE OF THE ROSE

According to Abou'l-Khair the colors of the rose are very varied; there is a red one, a white, a yellow one, and the one the color of the blue skies, and

⁸Marjoram.

⁹Tuft of hair about as thick as a finger covering the flower.

¹⁰*Ocimum citratum* according to Parkinson.

another which is sky blue outside and yellow within. The varieties are also very numerous; there is the mountain rose, the red rose, the white rose, all with double flowers, and the rose of China. The mountain rose also has two varieties. The white one without a touch of red and the red one like the rose of the Magi, which is the rose of the Orient, from the land of the Glaur and from Syria. The flower of the rose has five petals. The double rose is the best liked of all; it opens without expanding all the way; it is white striped with a darker red than the mountain rose; it has fifty or at the least forty petals. These petals have never undergone a change. This variety is the fullest and the best for distilling of rose water because it rejoices in the best fragrance.

* * * * *

This is the way to plant roses in land which is not watered. Cultivate the ground carefully; make ditches, trace furrows in a row about as we have shown. The planting is closer here; the distance between each row is a cubit.¹¹ The plants are planted as described above. This should be done early,¹² especially if one is working with cuttings. One should then plant the beginning of autumn in order that the plants can be fed by the rains.

* * * * *

They say that rose seeds should be sown in the same fashion as wheat and barley;¹³ the seeds are covered with manure and watered at once, then twice a week until autumn when all watering ceases. When the young plant is strong enough and has reached a certain height it is transplanted from pots into the open ground; but if the sowing was made in compost¹⁴ it is left in place or transplanted if convenient in the third year of flowering. The tops of the rose bushes are pruned in October, and these cuttings are laid in ditches of well cultivated soil which

have been prepared for them, and carefully watered. These cuttings will grow and give a handsome result. If one wants to plant pieces of branches four fingers long, they are planted perpendicularly in the ditch or in the ridges in proportion¹⁵ and they then should be watered. Everything one plants, scions, cuttings and offshoots should protrude above the ground as high as from the thickness of one finger to a shabrack.¹⁶

* * * * *

Another process used on the rose to obtain either a yellow or a blue flower according to one's desire.

Hadj of Granada¹⁷ says: In the month of December one chooses a rose stalk; one lifts the black peel which covers the roots without removing it, it is split longitudinally, then with the help of a slim iron instrument one separates the bark from the wood on all sides without removing it or breaking it either on the upper or the lower sides. This is done on the roots and on the stems of the branches which rise absolutely perpendicularly and solidly above the soil. Then one takes the best quality of saffron; it is triturated vigorously in a mortar. Then the space between the peel and the wood of the rose is filled with it. It is enveloped with a piece of linen which is attached by a ligature; on top of this some potters' clay is put, then it is recovered with earth and the roses which grow on that stem will be yellow. Hadj of Granada says he tried the experiment and obtained fine colors. If you want the rose to be blue take a "falich" of the best quality possible which is bright indigo. Do the same as you did with the saffron and you will have an azure blue rose.

Abou'l-Khair says that a resident of Damas told him that he had dissolved "falich" in water and with this solution he had watered the roots of a rose bush from the beginning of

¹¹Arm's length.

¹²In the season.

¹³Scattered by hand.

¹⁴He must mean in the open ground.

¹⁵To the height of the cutting.

¹⁶Saddle cloth.

¹⁷A contemporary of Ibn Al Awam's.

October until the flower showed itself and that it was a fine azure blue.

Hadj of Granada says that he does this just for amusement.

Abou'l-Khaïr says that if one boils the lily¹⁸ in water and uses this to water the rose bush several times the rose will be yellow, with the help of God!

CULTURE OF THE WHITE LILY (*L. candidum*).

* * * According to Ibn-Al-Façal, the proper soil for the white lily should have a gentle savor and be light, rich and manured. The lilies do not like a hard soil. If the soil where the lilies are to be planted is stiff, ashes and manure should be added until it is of the right consistency. The bulbs like soft pure water. Lily bulbs are planted in gardens in places where the tillage will not interfere with them, and on the borders of irrigation furrows. They should be planted after they have finished flowering in May and when the sap has gone down to the roots. Lily bulbs can also be planted in September and October. The hole is dug one span (the width of the expanded hand) deep or according to the depth of the bulb. Into the hole a certain amount of garden compost is inserted, then the bulb is placed and covered with soil. Between each bulb the space of a span is left, because offshoots are produced. They are watered once a week during the hot season and part of the autumn, and during the cold season watering should cease. Often the lily flowers the same year it is planted.

To propagate the lilies, the scales which compose the bulb are detached and planted separately or they are spread on the ground and covered with a pot and remain until they have swelled. In the spring they are planted in beds which have been well cultivated and richly manured. The scales are spaced a span apart; a little manure is scattered over them; they are covered

¹⁸Yellow narcissus is meant according to the translator's note.

with humus to the thickness of two fingers and watered twice a week until the bulb is completely formed; and the flowers bloom the third year. When the bulbs become too close they are thinned leaving the remaining bulbs the same distance apart as mentioned above. The stems of the lilies are buried under a light covering of humus in a shaded spot where the direct rays of the sun do not penetrate, and by autumn in the axil of each leaf a bulb will grow which can be planted as described above.

If one wishes to increase the lilies from seed the flowers are left on the stem without removing them until the seeds are formed; for they are borne in the finger-like shape, which is in the heart of the flower, and when this is quite dry it is put aside and sown, in August, in the same manner as onions, which are eaten green, namely, in beds which have been cultivated and manured and moistened by irrigation. They should be watered attentively during the hot days so that the soil never dries out; in autumn, lessen the quantity of water and in winter cease watering entirely. The young plants are pricked out as soon as possible, as has been described above. The young lily can be replanted for use at the end of three years. The year following the pricking out one begins to water at the beginning of April and continues to the end of August. Some say if one waters the base of the lily with the lees of wine it will produce a purple flower. According to Nabathian Agriculture the ground where the lilies are planted should be weeded with such care that not a single weed remains.

Adam recommends planting the roots of mint or thyme amongst the lilies. These close neighbors encourage the lilies' growth and protect them from injuries.

To distill the lily as is done with the rose petals a certain amount of camphor should be added to intensify the odor. If bruised and costus¹⁹ is in-

¹⁹*Saussurea costus*.

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introduced into the retort, the perfume will be delicious. The lily with white flowers is the most fragrant of all the lilies * * *. If a person is under the absolute necessity of eating lily bulbs, in the absence of all other sustenance, they should be treated in the manner

indicated above to remove the bad taste. To season the lily bulb and make it palatable, it is recommended to cook it with its petals. Most plants resembling the lily are fragrant in some of their parts.

Horticultural Periodicals

1800 - 1850

BY HAMILTON TRAUB

THE APPEARANCE OF INDIGENOUS AGRICULTURAL JOURNALS AND FOREIGN HORTICULTURAL PERIODICALS

AGRICULTURAL JOURNALS

The horticultural industries had remained for a long period of years incidental to general agriculture, excepting near the larger population centers, and it is only natural that when the stage was reached when indigenous agricultural periodicals were published some attention should be bestowed upon horticultural subjects. The Massachusetts Agricultural Repository, the official organ of the Massachusetts Society for Promoting Agriculture, was first published in 1793,¹ foreshadowing the later development of American agricultural journalism. The repository, however, did not include horticulture as one of its separate departments until the year 1821.² With the founding of The American Farmer at Baltimore, 1819,³ American agricultural journalism began in fact. This journal was soon followed by the New England Farmer, first published in Boston in 1822; the New York Farmer,

1827, and the Southern Agriculturalist, Charleston, S. C., 1828. Before 1850 a great number of agricultural journals had sprung up in various parts of the country. Almost invariably these periodicals devoted a limited space to horticultural subjects,⁴ and in some cases a separate department was given over to horticulture. On the whole, however, horticulture was relatively neglected by this class of publications.⁵ When distinctly horticultural journals appeared the editors of the agricultural periodicals, as a rule, contented themselves with the printing of extracts of the original matter contained in the horticultural press.⁶ So long as no distinctly horticultural periodicals could be supported, the function of this class of journals was undoubtedly a factor of no mean importance in the gradual building up of a taste for horticulture, and therefore constitute in part the first phase in the development of distinctly horticultural periodicals in America.

¹Bailey, *Cyclopedia of American Agriculture*, Vol. IV, p. 78, 1909.

²Bailey, *Standard Cyclopedia of Horticulture*, Vol. III, p. 1559.

³The *Plowboy*, Albany, made its appearance the same year.

⁴Magazine of Horticulture, 1835, p. 186.

⁵Hovey, *Magazine of Horticulture*, 1836,

p. 433. "This work [The New York Farmer and Gardener's Magazine] is, in reality, what the first part of the title indicates, a farming periodical; the quantity of the matter, particularly original, which relates to gardening, being but a very small portion compared with that treating upon agriculture."

⁶Ibid., 1836, p. 434.

FOREIGN HORTICULTURAL PERIODICALS

Aside from the American agricultural journals which devoted a limited part of their space to horticultural subjects, the European horticultural journals, especially those of England, were also possible sources of information on gardening subjects. These publications, as a rule, were quite expensive,⁷ and probably found their way in most cases into the hands of professional horticulturalists⁸ and enthusiasts; the masses remaining uninfluenced by any direct contact. While these foreign publications undoubtedly affected the development of American horticulture their influence was in measure minimized by the great difference between the British and the American climates. Having circulated in this country prior to the founding of any American journals of like nature, these periodicals naturally served as prototypes when American horticultural journals did appear.

INITIAL ATTEMPTS TO ESTABLISH HORTICULTURAL PERIODICALS

Chronologically, the development of periodical literature in America is a comparatively recent phenomenon. Apparently it was not until the '30's that any indigenous periodicals devoted exclusively to horticulture were published in this country. The horticultural industries had not attained sufficient proportions, and while the growing population, as a whole, was prosperous, the stage had not been reached when any considerable portion of the population manifested a sustained interest in horticulture. A bare rock surface that supports a scanty growth of lichens and mosses can not grow shrubs and trees which

⁷Hovey, *ibid.*, 1835, p. 4, "A great portion of these [horticultural periodicals of England and France] are very expensive, which precludes the possessing of them by many who would be glad to profit by their advice."

⁸William Robert Prince quotes the Pomological Magazine, London, in his Pomological Manual, 1831.

demand a deeper layer of residual soil. Likewise, the minimum prerequisite for the continued existence of any unendowed periodical is a sufficient number of interested financial supporters. Any horticultural periodical that might have appeared before the '30's would probably have died for lack of support. An occasional gardener's calendar, or other horticultural work, imported from abroad or published in America, undoubtedly found a purchaser,⁹ but on the whole the continued interest and support of a considerable number of persons, which periodical literature demands, was lacking in the field of horticulture.¹⁰

In 1832 D. and C. Landreth of Philadelphia published *The Floral Magazine and Botanical Repository*, a journal devoted to the infant floricultural industry. The first volume comprised 80 pages, with descriptions and colored illustrations of 31 stove and other ornamental plants.¹¹ After a tour of inspection to Philadelphia and other Middle Atlantic cities in 1837, Hovey remarks: "A floricultural work, in folio numbers, with four colored plates each was commenced some time since by the Messrs. Landreth, the letter press of which was conducted by Mr. D. Landreth, Jr. Although we had never seen a copy of the work until our late visit, yet from a hasty glance we should pronounce it a very excellent one, considering the present state of floriculture in this country; the difficulty, however, attending the selection of a good botanical draughtsman and persons to color the plates true to nature, Mr. Landreth informed us, had induced them to give up the work; not, we understand, and gladly, too, from want of patronage, but from the above causes; we hope to see them resume their work before long with renewed exertions."¹² L. H.

⁹P. Barry, *Fruit Garden*, 1860, Preface, 1851, pp. vi-vii.

¹⁰Hovey, *Magazine of Horticulture*, 1836, p. 433.

¹¹Bailey, *Standard Cyclopedia of Horticulture*, Vol. III, p. 1915.

¹²*Magazine of Horticulture*, 1837, p. 202.

Bailey, however, states that according to tradition it was not a paying venture and was for that reason discontinued after several years. From the nature of the case it may be that the reason for the immediate suspension was in harmony with the report of Hovey, but lack of patronage may have had much to do with the fact that it was not resumed at a later date.¹³

The *Floral Magazine* of the Landeraths was followed in 1833 by the *Ladies Horticultural Magazine and Floral Register*, and in 1834 appeared the *Magazine of Gardening and Botany*, monthly publications, both brought out at Baltimore. Information regarding the life of these periodicals is lacking. It is probable that their existence was only of short duration.¹⁴

THE APPEARANCE OF HORTICULTURAL PERIODICALS THAT SURVIVED OVER A PERIOD OF YEARS

The year 1835 deserves to be remembered in the annals of American horticulture, for in that year were launched three publications in Boston, one of which was destined to influence American horticulture profoundly. The *Horticultural Register* and *Gardener's Magazine*, a monthly edited by Thomas G. Fessenden, and of "more

than ordinary merit," ceased publication in 1839.¹⁵ The *Gardener's Magazine*, edited by Joseph Breck, founded in the same year, suffered a similar fate and became extinct in 1838. The *American Gardener's Magazine*,¹⁶ founded by C. M. Hovey and P. B. Hovey, Jr., which continued in existence until 1868, is a mine of information to the student of the later years of the period under consideration. With the founding of this publication American horticultural journalism at last became a recognized and established institution. In the bringing out of his magazine, Hovey proceeded on the principle of putting fresh fruit in an old crate, frankly modeling his periodical upon Loudon's *Gardener's Magazine*. But the substance of the journal was genuinely American. The work contained a very limited number of illustrations and was filled with essays on all manner of horticultural subjects, a record of current events, reviews of horticultural books and periodicals, descriptions of fruit varieties, and reports of the activities of horticultural societies.

The function of a periodical is clearly set forth by Hovey¹⁷ and the fact that the editor clearly recognized the importance of his work probably had as much to do with the success of the venture,—"To gather and diffuse use-

¹³L. H. Bailey, *Standard Cyclopedia of Horticulture*, Vol. III, p. 1559.

¹⁴Hovey, in the *Magazine of Horticulture*, 1836, p. 435, remarks, "ours was the first [horticultural periodical] which succeeded in the country." It should be noted in this connection that although the horticultural industries were gaining ground steadily, such a venture as the launching of a periodical devoted to a narrow field in horticulture coming at this critical period must survive after a struggle, and for a time the mortality was 100 per cent.

¹⁵Hovey, in the *Magazine of Horticulture*, 1835, p. 64, quotes from the introduction of Fessenden: "We have commenced and hope to establish the present work, to serve as an accompaniment to the *New England Farmer*, that the two publications might embrace the topics of most interest, as well as to field cultivators as to those whose tillage is mostly or exclusively limited to gardens."

¹⁶The title was changed to the *Magazine*

of Horticulture in 1837 in order to make the periodical more distinctive and not so likely to be confused with the other horticultural publications of Boston with similar titles.

¹⁷*Magazine of Horticulture*, 1836, p. 433; *ibid.*, 1835, p. 2. The object of the Magazine as stated in the first number is as follows: "The nature of the magazine, we premise, is clearly expressed in the title; it will be the principal purpose *** to present *** readers with original communications on Horticulture, Floriculture, Botany and Rural Affairs;—Selections, such as they think will afford useful and valuable information, from foreign and domestic works of distinguished reputation,—miscellaneous notices, etc., to promote and disseminate a taste for the art among all classes of society, and to offer such observation as will direct the attention of those who have not impartially considered the subject, to its interest, value and importance."

ful information in whatever manner, either by original communications, or by extracts from contemporary journals, should be the object of a periodical work treating upon any subject connected with the sciences or arts. But that magazine, paper, or journal, which contains the most original information, and which is continually bringing forward such to the notice of the public, must, in the view of all, not only be thought, but in reality be, the most valuable and interesting work. In such a one new ideas are advanced, suggestions thrown out, successful experiments detailed."

The task of keeping the craft afloat, however, during the early critical years was by no means an easy one, and demanded genuine courage. In confiding his first great problem to his readers,¹⁸ Hovey remarks, "* * * the task of conducting such a work is no easy one, and requires not only unremitting labor and attention on the part of the author, but the aid and cooperation of those who are interested in the subject of which it treats. Nor is this alone all: the expense attending the publication of a periodical containing original contributions is very great, and hence it can only be carried on with success when a good circulation is obtained. But the mass of the reading public call for cheap publications, and whether such are got up by fair or unfair competition it matters not. A work is published composed wholly or in part of extracts made up from some original periodical. The authors of

¹⁸Magazine of Horticulture, 1836, p. 433.

¹⁹Magazine of Horticulture, 1836, p. 434; ibid., pp. 434-435. Hovey continues: "In the present volume of the New York Farmer are included a large number of the original communications which have appeared in our Magazine. These are generally, it is true, copied with acknowledgment, though we are sorry to say, in some instances without it. In the number for March were no less than ten columns, consisting of two long, and we believe, considered very valuable articles; and these taken, too, from our *March*(!) number, which appeared a week or two previous. From the commencement of the January number to the last one published (October) there has appeared no less than thirteen

the former, seizing upon the contributions of the latter, appropriate them to their own use, and spreading them before the public completely paralyze the efforts of those who have labored to gratify their patrons. There are those, it is true, who know how to appropriate the matters; but they are few in comparison with the many: and while that magazine or paper containing original information is suffered to languish, that filled with extracts receives a liberal support."

While in a confiding mood, Hovey comes down to details, drawing a vivid picture of the status of the Magazine. "Since the establishment of our Magazine there seems to have been a jealousy, on the part of some of the agricultural papers in regard to its circulation, as if it would interfere with theirs; but so far from doing this, on the contrary, we believe it has increased their subscription lists, while our own has received but little benefit. Very few have bestowed but a passing notice upon it, unless we except the New York Farmer, which has done so to such a degree as to make that work a medium through which all, or a greater part, of the original information contained in our Magazine is circulated to the amateur horticulturalists in that State. We have forborne finding fault with the editors of this work, thinking they might see the injustice of this course, until we have been compelled to do so, from a sense of duty to our numerous contributors and to ourselves."¹⁹

The outburst of righteous indignation

articles from our work, making fifty-two columns of matter in the Farmer. At page 167 and 102 are two articles by our correspondents, signed Junius and S. Pond, copied without any acknowledgment; and these have been the rounds of the country credited to the New York Farmer. The last number for October contains four articles from our magazine for the previous month, taking up twelve columns, which is nearly one-half of the original matter in our September number. We hope we have said enough to convince the conductors of the New York Farmer that the course which they have pursued is both illiberal and unjust; illiberal,—to extract so largely from our magazine,—and unjust in doing so without giving due acknowledgment

tion on the part of Hovey was undoubtedly effective, for in the future issues nothing more is said of the subject.

The Magazine of Horticulture had been launched on the crest of a wave of prosperity, and in 1837 came the reaction. Hovey's problem became even greater, but in 1838 he gratefully remarks: "The close of the fourth volume brings us to a brighter and more encouraging period in our labors than when it commenced. Unfavorable, indeed, were the prospects of this volume; and we rejoice that we have found friends to support and sustain us through it. To them—one and all—we offer our congratulations. With the fifth volume for 1839 we look for a large and widely extended circulation."²⁰

The critical period in the life of the Magazine of Horticulture was not over, however, and in 1840 Hovey makes a direct appeal for support. "A hearty cooperation of friends of horticulture throughout the country is only needed to render the Magazine more and more useful * * * some of our old friends have not been so communicative as in former volumes, but we shall expect them to renew their acquaintance with our readers in the next. So far as our own labors are concerned, we shall endeavor to impart new interest to every volume. Let us invite every individual who appreciates the importance of one Magazine devoted to Horticulture to come forward and give it his hearty support."²¹

Even as late as 1846 Hovey is moved to write: " * * * again, we appeal to

for the same * * * we care not how many horticultural periodicals are projected; ours was the first which has succeeded in the country, and we hope, by a continuance of the same care and attention which has heretofore secured it favor, to make it superior to any that may be published."

²⁰Magazine of Horticulture, 1838, p. iv.

²¹Magazine of Horticulture, 1840, p. iii.

²²Ibid., 1846, p. iii.

²³L. H. Bailey, Standard Cyclopedia of Horticulture, vol. III, p. 1562.

²⁴Reviewed in the Magazine of Horticulture, 1842, p. 144. Full title reads: "The Or-

all lovers of science, especially in New England, to give us their aid. It is our aim to make the Magazine the first among Horticultural publications of the day."²² After 1846 direct appeals for aid are dispensed with and presumably the periodical had become firmly established. As the end of the period was nearing, the horticultural industries attracted more than sectional attention, and under the stimulus of increased interest in the subject a stage was reached when a venture of this nature, if properly directed, had every chance of proving successful.

Other attempts to establish horticultural publications during the same period did not prove universally successful. In September, 1839, Hooper and Elliott, of Cincinnati, brought out the Western Farmer and Gardener, which contained hand-colored plates, but it expired in 1845.²³ Apparently the first pomological journal published in America was Hoffy's Orchardist's Companion,²⁴ a quarterly which began in 1841. This periodical was "intended to supply the same place in the pomology of this country which the Pomological Magazine of Lindley did to the English cultivators of fruits."²⁵ The only quarto volume issued, with colored plates, contained "practical information which the editor has gathered (possessing) much interest; original articles on the culture of the grape vine; on transplanting fruit trees, on pruning, and on the protection of peach trees from the worm."²⁶ In 1845 Charles W. Elliott, of Cincinnati, published the Pomological Magazine, a bi-monthly. Its expressed

chardist's Companion; a quarterly journal devoted to the history, character, properties, modes of cultivation, and all other matters appertaining to the fruits of the United States, embellished with richly colored designs of the natural size painted from the actual fruits when in their finest condition, and represented appended to a portion of the branch, with leaves and other characters as seen when on the tree; also flowers, cut fruits and stones. A. Hoffy, Editor and Proprietor, Philadelphia, 1841."

²²Magazine of Horticulture, 1842, p. 145.

²³Ibid., 1842, p. 146.

object was "to invite particular attention to the fruits growing throughout the West."²⁷

AMERICAN HORTICULTURAL PERIODICALS ATTAIN LITERARY EXCELLENCE

Hovey had firmly established horticultural journalism as an indigenous institution, and the Magazine of Horticulture dominated the field until July, 1846, when appeared the first number of the *Horticulturalist*,²⁸ published at Albany, and edited by the inspired A. J. Downing, of Newburgh, N. Y., until his lamented untimely death in 1852. With the appearance of this periodical, horticultural journalism in America attained a degree of literary excellence, especially in the editorials of A. J. Downing. The literary quality of this popular writer's prose alone imparts a well deserved immortality to the volumes of this publication. Aside from the editorials of Downing, which stressed rural architecture but covered the whole range of horticultural subjects, articles by other eminent authorities on pomology, olericulture, floriculture and landscape gardening; reviews of horticultural books and reports of the activities of horticultural societies were also published. For the remaining years of the period American horticultural journalism was dominated by the *Horticulturalist* of Downing and the Magazine of Horticulture.

Having traced the development of horticultural literature in its various departments in America from 1800 to 1850, we now turn to a survey of the general development over the whole period. The following table, based upon the bibliographical titles listed hereinafter, shows the number of titles on horticultural subjects published in America, by ten-year periods, from 1800 to 1850. The titles include American editions of foreign works and adaptations and compilations from foreign horticultural works.

²⁷Ibid., 1843, pp. 345-346.

<i>10-year periods:</i>	<i>Total number of titles:</i>	<i>Average number of titles per year:</i>
1800-1809	5	0.5
1810-1819	4	0.4
1820-1829	17	1.7
1830-1839	21	2.1
1840-1849	30	3.0
1800-1849	77	1.54

The table shows clearly the correlation between the extent of economic development and the absolute number of titles on horticultural subjects published during the fifty-year period, 1800-1850. During the first two decades from 1800-1819, before internal development, and a consequent division of labor with its concomitant, the growth of non-agricultural urban population, had proceeded far, only nine titles, less than one each year, and less than 10 per cent of the titles on horticultural subjects during the entire period, were brought out. During the three decades after 1819, when sectional division of labor was carried toward its logical conclusion, and a relatively greater non-agricultural population was gradually being concentrated in the industrial centers, and an intensified internal commerce was gradually developing, the number of titles published on horticultural subjects shows a perceptible increase; more than 90 per cent of the total number of titles were published during the thirty-year period ending in 1849.

The evolution of American horticultural literature has been progressive, passing through at least three well-recognized phases: (1) Up to 1787. Horticulture being primarily incidental to general agriculture, the first phase is characterized by the absence of any separate indigenous horticultural literature, and by the dependence of the American upon foreign treatises, and incidental references to various indigenous publications, especially agricultural journals and almanacs; (2) 1787-1817. The second phase is char-

²⁸Full title reads, *The Horticulturist and Journal of Rural Art and Rural Taste*.

acterized by conscious attempts to create an American horticultural literature. The horticultural industries had assumed some importance as distinct from general agriculture, but were, however, still of relatively slight importance. No noteworthy specialization having taken place, the treatises produced were devoted to general horticulture; (3) 1817-1850. The increasing importance of the horticultural industries with the economic development of the country ushered in the third phase, which is character-

ized by the appearance of specialized treatises devoted to departments of horticulture or single subjects, and reached its culmination in the appearance before 1850 of horticultural treatises possessing literary excellence. Periodical literature shows a similar development. Notable advancement in this field took place during the period from 1835 to 1850, when the growing importance of the horticultural industries has given rise to a class which had a sustained interest in horticulture.

Speaking of Trees

BY BEVERLY T. GALLOWAY.

Andrew D. White, at one time Minister to Russia, later Ambassador to Germany, and for many years President of Cornell University at Ithaca, New York, was a great lover of trees. He was familiar with many historic trees and often went out of his way to search for such things and become personally acquainted with them. One day, while visiting Mr. White in his fine old home on the University campus, the subject of trees came up and I told him of a tree planting experience in which President Roosevelt and two members of his Cabinet participated. The Cabinet members were Secretary of the Interior Hitchcock of Missouri, and Secretary of Agriculture James Wilson of Iowa.

When Mr. Hitchcock left Russia, where he served as our Ambassador, he brought back with him a collection of acorns from a tree growing in the grounds of the Czar at St. Petersburg. The St. Petersburg tree came originally from an acorn secured at Mount Vernon, near the tomb of Washington. The acorn was said to have been planted by Alexander I, Emperor of

Russia, who loved trees and was an ardent admirer of George Washington.

I told Mr. White how Mr. Hitchcock brought back the acorns and had them planted by a friend in St. Louis, Mo., and how three or four years later, when the trees had attained fair size, he had two of them sent to Washington. Secretary Wilson asked me to make the necessary arrangements for planting the trees in the White House grounds. The holes were accordingly dug and a brand new spade, decorated with red, white, and blue ribbon, was provided. On a sunny April afternoon I accompanied the two Secretaries to the White House grounds. In a few moments President Roosevelt rushed out in his boyish way and, after a few words of greeting, seized the spade and proceeded to plant the trees in approved fashion, even to stepping into the holes and using his feet to firm the soil. The President then handed the spade to Mr. Hitchcock, who threw in a few spadefuls of earth. He then offered the spade to Secretary Wilson, who drew himself up in his most courtly way and said, "I don't think my

hands should profane that implement, Mr. President, after you have touched it."

Mr. White listened intently to the story and then said, "Now let me tell you the beginning of it." He did, and this is the substance of what he said.

Back in the days of Alexander I, one of the greatest of Russian rulers, we had a Minister representing our country who was something of an aristocrat and not a little inclined to exaggerate his own importance. One day the Minister had a visit from an American sailor lad, who had spent about ten days in an effort to come face to face with the man who represented the United States in this far-away land. The boy told the Minister that he was on leave from his ship and that he had an important gift he wanted to present in person to the Emperor. He explained that the gift consisted of a few acorns he had gathered at Mount Vernon and he wanted with all his heart to place them in the hands of the Emperor, who, he had been told, was a kindly man and loved Washington dearly. The Minister sat aghast at the effrontery of the boy for even proposing such a thing and proceeded to lecture him and Americans in general for lack of even the ordinary amenities governing such matters.

A day or two later the Minister was awakened by a great hubbub outside his window. The Minister had just got out of bed and when he looked out he rubbed his eyes, for he thought the Emperor himself must be calling on him. There was a resplendent outfit blazoning the Arms of the Emperor and filling a good part of the square. There was a carriage drawn by four beautiful black horses, and a number of beautifully mounted outriders. To top it off, there were soldiers and at least four dazzling footmen. While the Minister stood in his bathrobe, with mouth agape, the door of the carriage was opened by a bowing footman and our sailor

boy stepped out, looking as unconcerned as if he had been accustomed to such things all his life. The Minister hurriedly dressed and rushed down to see what it was all about. He found the boy quite unconcerned. The lad told the Minister that the Emperor had very kindly placed the whole retinue outside at his disposal for the day, and that before seeing the sights of St. Petersburg he thought he would just drop around and pay an informal call.

"But," gasped the Minister, "how did you reach the Emperor?"

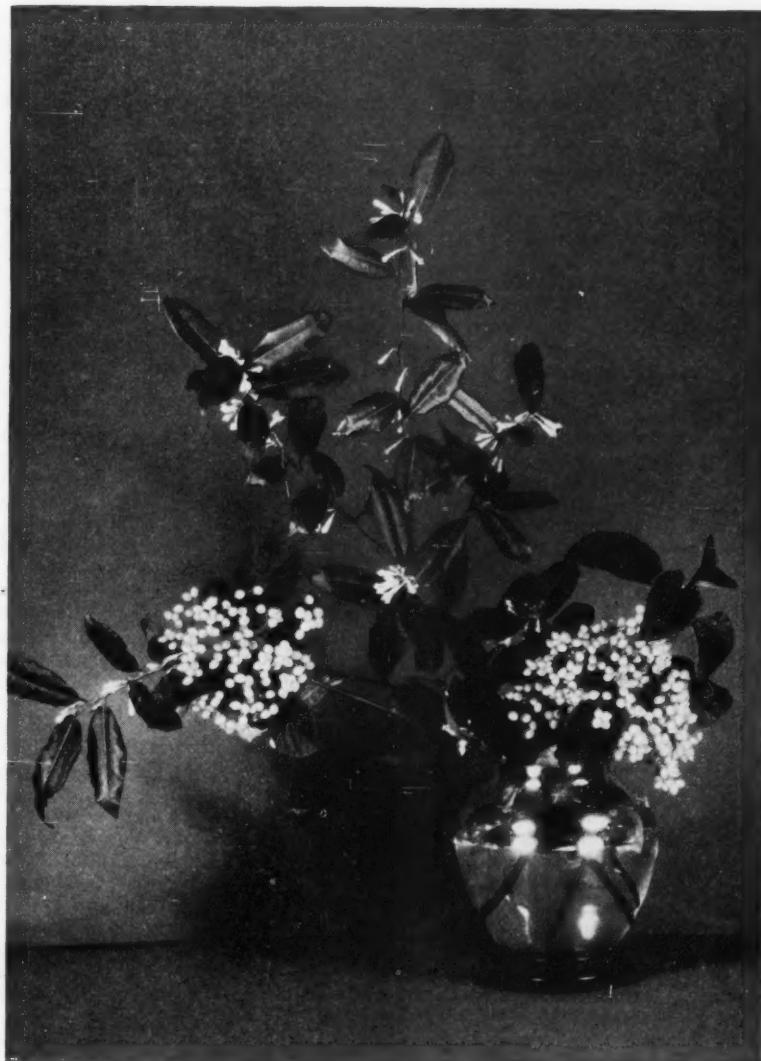
"Oh, that was easy!" remarked the boy. "After you turned me down, I wandered over by the palace gates and it just happened as I got there a kindly faced, military-looking man came out, and in a few words I told him my story. I even told him," naively remarked the boy, "what you said about the Emperor's inaccessibility."

The gentleman said, "Come with me, my lad, and I will see what can be done."

Gate after gate opened at the approach of the pair, and finally they reached a beautiful park. Here they found a kindly man walking among the trees, and the boy's guide, in a very informal way, introduced him as His Majesty, the Emperor.

The Emperor listened to the boy's simple story, simply told, and when it was finished he reached for the handful of acorns which the boy presented. He took them almost reverently and beckoned for the boy and his guide to follow him. At a beautiful open spot in the palace grounds, the Emperor knelt and planted the nuts, and it was from the trees grown from those that Mr. Hitchcock secured his acorns.

Who can say what was in the mind of the kindly Emperor when he told the boy to return next day and he would be provided with the means of paying his respects to the American Minister, and seeing the sights of Russia's capital city?



Lilian A. Guernsey

Eleagnus pungens and Viburnum dilatatum

[See page 126]

Words

In our last issue we had a look at leaves when they came all in a piece, a very convenient arrangement but one which they do not follow consistently, as any one will find if he looks about, for leaves not only have various patterns scalloped and slashed into their margins, with which we do not intend to concern ourselves at the moment, but have as well various divisions in which one or more blades are borne upon a single petiole, forming what is known as a *compound* leaf.

If the *leaflets* as the "little leaves" are called, are arranged along the sides of the petiole, as in the rose, the leaf is said to be *pinnately compound*, and that part of the petiole which bears the leaflets is no longer considered a petiole but gets a name of its own, *rhachis* (which is pronounced *ray-kiss*). If, however, they are arranged so that all the leaflets stand at the end of the petiole as in the Virginia creeper, the leaf is said to be *palmately compound*.

Most often in a *pinnate* leaf there is an odd terminal leaflet, and such leaves are known as *impari-pinnate* or *unequally pinnate*; but if there is no odd leaflet, the leaf is but *pari-pinnate*; while if the terminal leaflet is transformed into a tendril as in the sweet pea, the leaf is called *cirriferous pinnate*, a term not common in texts.

No such variations are possible to the palmately compound leaf, but it has a vocabulary of its own with various terms given to designate the number of the leaflets, *unifoliolate* as in barberry; *bifoliolate* as in twin-leaf and Spanish lime; *trifoliolate* as in clover and strawberry; *quadrifoliolate* as in marsilea; *quinquifoliolate* as in Virginia creeper, and so on.

If the *rhachis* is branched, the leaf is said to be *decompound*. To make this more specific we have another

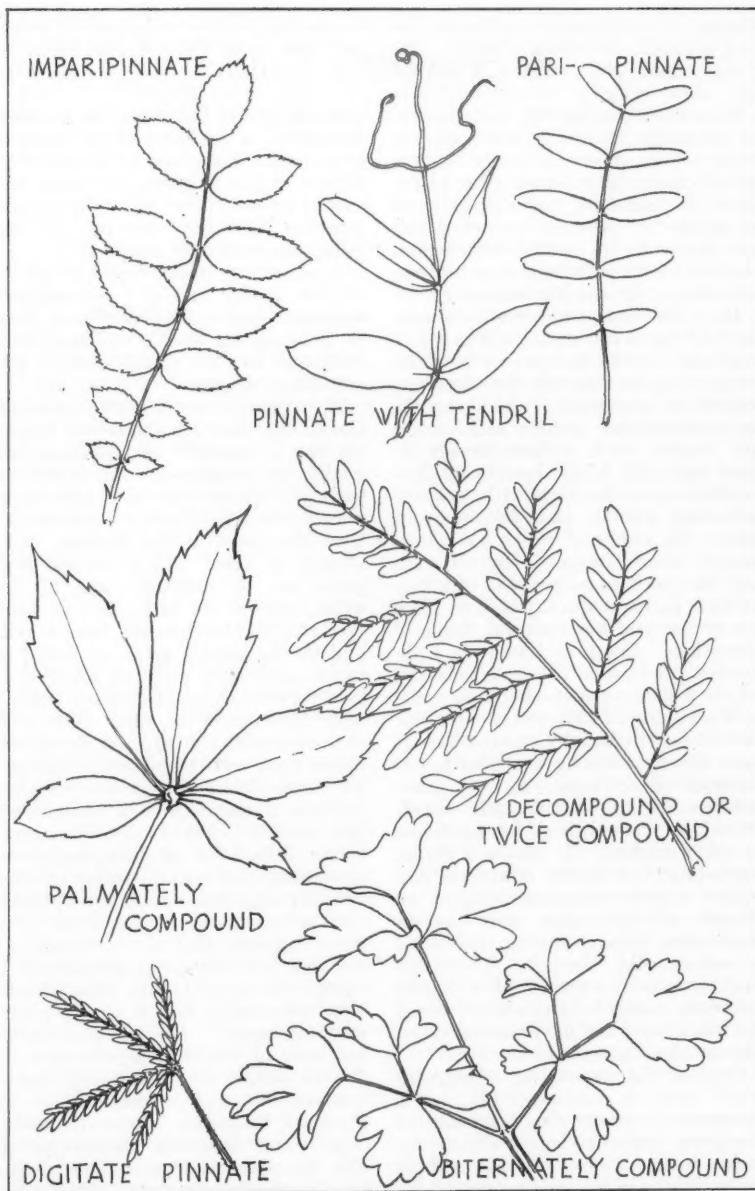
word, *bipinnate*, which describes a leaf like that of the acacia or honey locust. An even more common division is seen in leaves like those of the meadow rue or some of the umbellifers in which the side division of the *rhachis* are branched in turn, so that we can have again a numerical series, starting *biernate*, *trinervate*, and so on.

In palmately compound leaves in which the leaflets are compounded we have what is known as *digitate pinnate*, as in the leaf of the sensitive plant so often grown as a curiosity in conservatories.

The words which were discussed in the last issue had to do with the shapes as a whole. They can not be applied to the leaf if it is compound, but are applied to the shapes of the leaflets, as for example, a palmately compound leaf with *ob lanceolate* leaflets.

These are but the beginnings of the various combinations of adjectives which are assembled in some cases to give definite ideas of the leaf shapes. Not all of the terms are strictly technical in their usage. The common adjectives, broad and narrow, often appear apposed to the adjective they limit much as if the writer had in mind some Gargantuan German compound. So we have broad ovate, narrow obovate. Again we have combinations of the original terms as in the case of linear lanceolate, which suggests an average between the lines marked out between the two terms, a leaf in which the breadth does not vary greatly from the base to the tip and tapers to a point sufficiently to keep it from being linear.

To these two sets of terms which suggest the organization of the leaf and define the general shapes of the parts, another series is to be added in the next issue which will add to the image of the leaf from the printed word by defining the variations that occur on the margins.



A Shopper's Guide

Midsummer is not the best time to go shopping, as one is more or less restricted in choice to seeds of perennials and winter annuals for planting in late summer; bulbs that should be ordered at once; a few evergreens and shrubs to be ordered for autumn planting—but midsummer or no, one can always do catalog shopping.

In a list from southern California there are many interesting things which might be of value in other parts of the country, as for example the evergreen barberries, *gagnepainii*, which spreads by underground stolons and makes low bushes with yellow flowers in June and dull black berries by November; *tricanthophora* with delicate spreading growth and yellow green leaves, the oldest of which color brilliantly before dropping in the fall; and the excellent *sargentiana* of which we have had much to say before. Here too are several horticultural forms of ceanothus, almost as lovely as California's own, and *Daphne odoratum*, which will survive in sheltered spots at Washington, D. C., and give at least part of its wonderfully scented flowers each spring. Among the offerings is *Loropetalum chinense*, an evergreen relative of the witchhazels which should be investigated for hardiness in colder regions. It makes a dense, much-branched shrub; flowers in late winter or early spring according to the climate of the region, and like all plants that blossom during the season of winter cold, loses its flowers by frost in unlucky seasons. The flowers are borne in small clusters like those of the witch hazel and have narrow strap-like petals of greenish white.

One of the interesting evergreens much used in Japanese gardens is *Podocarpus macrophylla*, a relative of the yews, with flat leaves about four inches long or more, and as much as three-eighths of an inch across. Like the yews it will tolerate considerable

pruning, and in Japan is often as much bedevilled as are some of the yews in England. This plant is available in several of the southern nurseries, and should be used more as it gives an interesting diversity to the general foliage masses of the conifers.

It might be noted that old plants of this species and of *Cunninghamia lanceolata* lead rather indifferent lives at Washington, D. C., but have continued to live for many years in the old Botanic Garden.

If, to change the subject, you would like an experiment with seeds of woody plants, a number of combinations might be suggested. A dealer in Georgia, whose list is suspiciously reminiscent of Vilmorin Andrieux et Cie, offers seed of the Eastern, Californian, Chinese and European redbuds, and in addition seed of the white form of the last. If you have ever studied the changing hues of redbud in the tender green of southern woods, and have a bit of woodland of your own, or even a tiny back border, what more need be said. The seed comes up well, if fresh, and the young plants grow swiftly as such things go. The same dealer lists seed of *Daphne gnidium*, a poor daphne as daphnes go, but sweetly scented; *Davidia involucrata*, famed for its fluttering doves or its dirty dish rags according to your eyesight; and *Descaisnea fargesii*, which also seems overly applauded. For sheer curiosity, *Hovenia dulcis* with its amazing fruit clusters might be tried, though the plant has so little beauty to recommend it that it hardly seems worth the space. It might pay also to buy seed of *Parrotia persica* with its flowers before the leaves, and, for a final choice, such a combination as *Gordonia lasianthus*, *Stewartia monodelpha* and *Stewartia pseudocamellia*. For the extreme South there might be *Gliricidia maculata*, which the writer saw with its ropes of pink-

tinted locust-like flowers against a blue sky and a cruel coral rock last February.

With a Northerner's perverse interest in things which can never concern him, one wonders why the hedychiums are not more used in the South. These huge relatives of the ginger with their spectacular leaves and fine flowers have always had a particular charm ever since first seen on a tiny island in the famous lake at Hangchow.

In an English list one finds seeds offered of a dark-flowered form of *Iris chrysographes*, two exotic sisyrinchiums, and *Erythrea massoni*, which is described as a gentian in clear pink and almost as temperamental.

An Irish list offers the seed of *Ixiolirion pallasi*, which should be better known here and will be most easily obtained by raising from seed. Here, too, is listed *Arnica montana* which is Mr. Elliott's sure excuse for

an immediate departure for a collecting trip in Switzerland. *Roscoea purpurea*, a smaller and more hardy relative of the gingers than the hedychiums mentioned before, with hooded purple flowers, might be investigated. *Yucca gloriosa*, which grows with a tall stalk, is listed here and though an American plant is worth trying for its late flowering and tropical effect. In the evergreen plantings about the Capitol in Washington, it makes a brave and spectacular show in September and October.

In a Massachusetts list of lilies one finds *cernuum*, *medeoloides*, and *japonicum* if choice and unusual plants are wanted, and *Batemanniae*, *Davidii* and *colchicum* for a trio of somewhat less fickle beauties.

Even at the risk of being tiresome by much repetition, do not forget *Syringa pubescens* or *Iris persica*—yes, *Iris persica*,—and a stamped address for reply, please!

Why in all the hurly-burly about flower arrangements, in the present day flower show, has no one ever had the temerity to announce a class or two for bouquets and then arbitrarily cast out all the bouquets that are pushed into the arrangement classes? To be sure it would be extremely difficult to attempt any iron-clad definition as to where one composition began and another ended, as to where a bouquet ceased to be a bouquet and became an arrangement.

It might simplify matters a little to remember that the word arrangement implies tacitly some Japanese influence and that bouquet denotes its continental derivation. Walking still further into dangerous territory, one might venture that arrangements recognize *line* in composition and strictly should be considered as two-dimensional, whereas bouquets depend chiefly upon *mass* and *color* in their composition and essentially com-

positions "in the round." The first are related to painting, the second to sculpture. In justification of the first statement, one should be reminded that the Japanese, who have become most autocratic in their work, place their arrangements in the *tokonoma*, which is a niche-like recess where they can be seen only from the front.

Even where some attempt is made at Japenesquerie, the results are lamentable and show that the spirit of the Japanese concept has not been in any way understood. Several seasons ago a prize winning arrangement of dogwood was much talked about in which a rather spidery bough of dogwood was propped up in an oriental vase so that you looked at the flowers' faces! What could be funnier? You never see into a dogwood, full face, unless the bough sweeps down and you look down into it. The whole character of the growth of the tree was violated in the study, and yet we go on.

A Book or Two

Garden Lilies, by Isabella Preston. Orange Judd Publishing Co., Inc., New York, 1929. 126 pages, illus. \$1.25.

One expects from Miss Preston a good working text filled with succinct comment as a result of her practical experience, and in this small handbook one's expectations are fulfilled. The first part of the book includes the inevitable cultural and historical chapters and the second part is an encyclopedia discussion of the species in alphabetic order with comments on various hybrids noted under their seed parents. The illustrations are excellent and one can find only one fault, brevity in text.

American Rock Gardens, by Stephen F. Hamblin. Orange Judd Publishing Co., Inc., New York, 1929. 125 pages, illus. \$1.25.

Any one who has followed the courageous work of Mr. Hamblin in building up the Botanic Garden of Harvard University will be delighted to have a book from his experience. The present volume, however, is somewhat disappointing. The book is organized in two parts, the first given over to the essentials of cultivation and construction and the second to lists of plants. These latter may be all very well for the general public but make very tiresome reading in a book which might have had pages of inspiring text and a few pages of appendix for the list-hungry. The chapter on the "Typical Plan" does not seem very successful. Certainly the pictured plan is ugly, however practical it may be, for checkerboard pockets, or better pens, always betray the too artificial construction.

The pictures are well planned but are not quite good enough photographically to be what one would like.

Gardening in the Lower South, by N. Harold Hume. The Macmillan Company, New York, 1929. Fifty-three pages, illus. \$5.00

This book belongs in the "Rural Science Series," and like some of its fellows is almost too much of a textbook both in typography, make-up, and presentation. This may not be a legitimate quarrel, but the present reviewer enjoys his adult education with fewer class-room sign posts. He would also enjoy a book from Mr. Hume in which there was a less calculated effort to cover the field.

In spite of all this quibbling, the book must be considered a veritable compendium of useful information for the gardeners of Florida and the Gulf Coast. Mr. Hume's qualifications are too well known and his identification with the most advanced horticultural practices is too complete to require any comment. The discussions of azaleas, cycads, bamboos and palms, in addition to the more general chapters, make a great appeal to the reviewer, as do such pictures as those of *Cyrilla racemiflora*, a native lately figured in *Gartenflora*; *Styrax grandiflora*, *Rhododendron chapmanii*, *Befaria racemosa*, and *Prunus caroliniana*.

The return to the original spelling *Buganvillea*, displacing the current *Bouganvillea*, seems unnecessary, especially since the first spelling was incorrect as the species was dedicated to de Bouganville. As it is in this text, the new first syllable should be one more deterrent in the use of this already too conspicuous woody vine.

Gentes Herbarum, by L. H. Bailey. Vol. II, Fasc. II. Ithaca, N. Y., 1929. 115 pages, illus.

In this issue we have the first paper on "The Domesticated Cucurbitas," inspired doubtless by a long interest

in the huge tribe. As is stated on page 65, the paper is divided into seven parts: The origin of pumpkins and squashes; cross-breeding and hybridizing; inside the pepo; the Linnaean conception of Cucurbita; the systematology of the cultivated Cucurbitas; the case of the turbans and synonymy of the cultivated Cucurbita group. There is much of interest here for the gardener as well as the scientist, all written in Dr. Bailey's inimitable way.

City and Suburban Gardening, by Chesla C. Sherlock. The A. T. De La Mare Co., Inc., New York, 1928. 186 pages, illus.

The most interesting thing about this little book is the fact that the author has limited his field and has then abided by his limitations. The gardening which is discussed is the type of gardening that is practiced by the well-known and much-jeered-at suburbanite or small farmer who has commuting habits, limited gardening hours, no hired help, and a modest garden budget. The planting plans are for small areas. The planting lists are brief, inexpensive, and as diverting as they can be under the circumstances. The most regrettable omission is the lack of planning for lots with irregular topography. All Mr. Sherlock's designs are for land as flat as a drafting table. The illustrations for the most part are good, but several are unpardonable as, for example, the rock garden of page 152, which is a very poor rock garden and outrageously placed, or the evergreen planting on page 72, which has too many tree-like species for a foundation planting. There are a few typographical errors and other matters to record, for example the most amusing publisher's note, if we were inclined to be captious; but on the whole this very readable book should find a large and appreciative public and be of immediate assistance to them.

Lawns, by F. F. Rockwell. The Macmillan Company, New York, N. Y., 1929. 87 pages, illustrated. \$1.00.

Another of Mr. Rockwell's competent routine handbooks, devoted in this instance to the lawn, one of the most difficult of the amateur gardener's developments and one upon which the success of his whole scheme is largely dependent.

Patio Gardens, by Helen M. Fox. The Macmillan Company, New York, N. Y., 1929. 228 pages, illustrated. \$6.00.

If one may be permitted a paradox, this is a book both delightful and aggravating.

Written by an alert observer with a nice eye for seeing and a keen and sympathetic mind for perceiving the inner and poetic meanings of material things, it leads one on from one delightful impression to another. When finished, one has much of the atmosphere of Spain, a vivid impression of details and a lively sense of the historic and racial background of garden development there, and it may be urged, in the light of the preface, that this is all the author proposed to do.

The present reviewer objects that the title is much less inclusive than the contents and that the chapters are too chaotic in arrangement. In the opening chapter, "Transplanting Spanish Gardens," there is a definition and description of patio gardens, but it is harried and confused by the author's asides about the substitutions and adjustments needed in bringing this garden style to this country.

After this we have better going, with a nice emphasis on the features that give character to the Spanish style, first in matters of design and then detail, but in discussing both, the author has repeatedly strayed beyond the confines of the patio, lured on by one delight after another.

One wonders a bit about the plants suggested for use as substitutes in this country. Too often they imply the

northern planting lists, and surely one should not urge Spanish gardens for our Northern States: In Florida, perhaps, and the parts of California, Arizona and New Mexico, we have climates that might warrant Spanish architecture and garden styles; but even there, what of the life and manners of the people living in these

transplanted gardens and what of our too hurried living? We are of another world and of another stock, and oftentimes are perhaps too much delighted by strange things so that we might find ourselves embarrassed by a masquerade prolonged into a lifetime in a setting with a Spanish influence, no matter how beautiful in itself.



The Hardy Amaryllis in Spring

The Gardener's Pocketbook

THE HARDY AMARYLLIS

In all gardens there are some plants and flowers which interest even the least botanically-minded. *Lycoris squamigera* is the spectacular thing in my collection, and to a good many persons I suspect I am known only as the owner of a fine patch. From early spring, when the strap-shaped leaves rise like an Irish army on parade, lengthening to two feet or more, and curving in a fountain of foliage (where, alas! rabbits and cats find sanctuary

from my wrath!), through the time of their collapse and disappearance on to the compost pile, and the rise a month later of the magical pink bloom, that bed always interests the public. Automobiles draw up to the curb, and admirers hang on the fence and gesticulate. People often stop me on the street to ask when "the lilies will bloom." I can tell, almost to a day, and in emergencies I can hurry them. The latter part of July, from the bare ground—cleared of weeds, and daily mulched with green lawn clippings—

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suddenly pop up arrow-heads resembling blanched almonds, which grow like magic, so that in ten to twelve days stout leafless stems have risen, two and a half to three feet tall, each bearing noble umbels of flowers, six to eight in a cluster, each as large and much the shape of Madonna lilies. The color is indescribable, a delicate silvery rose, with touches of blue and lilac and violet. In the late afternoon, as the low sun shines through them, as they sway in the breeze, and the birds rest in their shade or flick the mulch, the effect is especially enchanting.

My attention was first called to this plant, *Amaryllis Hallii*, in Professor Sargent's "Garden & Forest," many years ago, and I procured a few bulbs from that fine old firm James Vick of Rochester. Later I got a few more, together with two wee bulbs of *Lycoris aurea*, from Boehmer of Japan, in those happy days before the quarantine. My present collection is only the natural increase, besides many bulbs having been passed on to others. Last year I counted over 150 stalks.

The large bulbs are perfectly hardy, and should be planted when dormant, preferably after the season of bloom, in rather light, sandy soil, enriched with bone meal, wood ashes and a little leaf mould. Cover with four inches of soil and plant 8-12 inches apart. They may be left undisturbed for a number of years, till the bed seems overcrowded, by which time the soil is pretty well exhausted. After five or six years, dig up the whole plot, and either use fresh soil or re-enrich as before. In off-years I scratch bone meal and ashes into the surface after the leaves have been raked off. In case of dry weather the bed gets an all-night soaking from the hose, and this hastens the bloom by a day or two.

With all bulbs the leaves are the means by which the roots are brought to maturity, and as the bloom depends on that maturity care must be taken that nothing interferes with their proper development. They must not

be raked off till so ripe that no pulling of the bulbs occurs.

As an abundance of sunshine is needed when the bulbs are ripening, the bed should be in a sunny place; but if light shade from a distant tree can temper the afternoon light, so much the better, as the flowers naturally fade in hot sunshine. I fancy it is the lack of such heat that prevents the English from using this plant. At least, in all my reading of English garden lore for many years I never saw it mentioned, though its sister, *Amaryllis belladonna*, is a favorite; and the Rev. Jacob Jacob made one glowing mention of *Lycoris aurea*.

The flowers make a much better showing in a longish bed by themselves, rather than in a mixed border. Half their charm and effect come from the leafless stems arising from the bare soil. My single objection lies in the odor of the flower, which to me is disagreeable, though many do not find it so. For this reason I never bring it into the house, any more than Bermudians allow their Easter lilies in their houses. But they are fine for porches, and in the open the odor is not objectionable.

My two wee bulbs of *Lycoris aurea* have after some twenty years increased only to ten or twelve. With me they never reach a height of more than twelve inches, and in the border are inconspicuous. The cut stalks, however, are perfectly charming in the house, the reddish-golden flowers, one-sided on the stem, in an umbel of six to eight, each about two inches long. I suspect that the specimens from New Zealand which so fascinated Mr. Jacob were grown under much more auspicious skies than my own.

My experience with *Amaryllis belladonna* is amusing. I keep no house or cellar-wintering plants, but experimented with one bulb in a very warm protected border, and planted it, as I was told, very deeply—some eight inches. To my knowledge it never



Hardy Amaryllis in July

showed itself, and I supposed it had winter killed. Late last summer, at least six years after planting, digging in that spot I came upon a bunch of stout, pale green leaves, four inches below the surface. I mined and reached the great bulb. It was replanted with the leaves on the surface and they grew and became normally green. As I write, the following May, there is no sign of *Belladonna*. Has she given up trying or after six years shall I find her again?

LUCY ELLIOT KEELER.
Fremont, Ohio

CHINESE IRISES

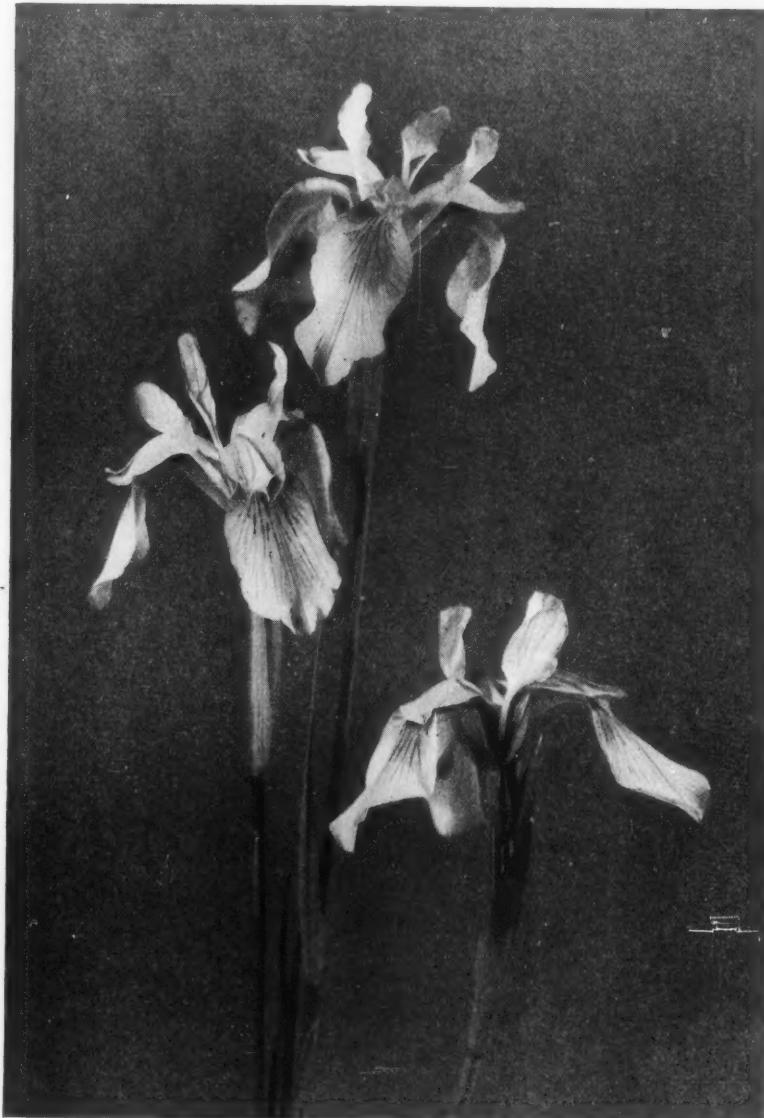
The iris from the alpine meadows in south China have been known in cultivation for a considerable time but they have not yet been used as commonly as the more familiar Siberian and Oriental iris. The easiest way in which to secure them is to import seed and raise a lot of plants which can develop in one's own garden without any of the vicissitudes of travel, for all of these plants have rather slender roots and rhizomes, and in this day, when plants have to be shipped most often without soil, fare badly in transit. The seeds require no more care than do those of *Iris sibirica*, and germinate as freely and come into flowering in about the same time with

the exception of seed of *Iris chrysographes*. I have had this in many small lots and have had very indifferent germination and a conspicuous number of albino seedlings which eventually died. I have noted with it as well a tendency to delayed germination which is rather irritating.

If one raises these plants from seed he is sooner able to plant them in some quantity and so bring about the best sort of garden picture. The isolated clump is lovely enough, but if one can have twenty to thirty clumps, planted so that they give the effect of a sea of flowers rising over the grassy foliage, as they must appear in some of the alpine meadows, the effect is even lovelier.

Iris forrestii Dykes. (See page 127.)

This is the least tall of the series that has flowered here—as compared with the robust if slender *sibirica*, a mere pygmy. Its foliage, very slender and of a delicate yellowish green, is lax enough to make a graceful tangle some eight to ten inches high through which rise, just as bearded iris are going out of bloom, the slender foot-high stalks, each bearing two terminal flowers so lightly poised and so translucently yellow that one is forced to the old and threadbare comparison of hovering butterflies. There is some



Lilian A. Guernsey

Iris forrestii

[See page 128]

variation in the amount of the brownish veining that is dotted in the center of the fall, but in no case is there enough to mar the clear effect.

Iris wilsoni Wright. (See page 129.)

The other yellow species from this general territory is named for E. H. Wilson, who has so many oriental beauties dedicated to him. Unlike Forrest's plant, this is a tall and slender beauty with more characters like those of *Iris sibirica*. The yellow hue is much less pronounced and tends to whiteness in the flowers I have seen, with a clearly marked blotch of brown-dotted veining in the center of the blade. The yellow color is quite clear in the style branches and fades almost to white in the standards, which are always borne in the interesting spreading way that is shown in the illustration, a position which appears as well in the standards of *Iris chrysographes*.

Iris bulleyana Dykes. (See page 129.)

This plant, for me, has made as tall a growth as Wilson's iris, but in all the plants that have flowered so far has given much smaller blooms of a singularly delicate charm. They vary greatly in color with a ground of tinted white over which are veins made up of dots of blue lavender that grow deeper toward the signal blotch near the center of the blade. Because the falls are not so long as in some of the other species, the flower does not make so great a show, but when the clumps have reached a reasonable size the effect is very charming.

Iris chrysographes Dykes. (See page 131.)

This is perhaps the most gorgeous of the series, forming strong clumps of rather stiff erect foliage with three-foot stalks of flowers over-topping the leaves. The flowers come a little after those of Forrest's iris and some-

what before the other two described above, but all remain in bloom through the same period. The original plants of this species I purchased from Van Tubergen many years ago were of a deeper and finer color than any I have had since and it has been a constant regret that the iris borer found them so much to his taste. In them the color was a deep red purple of the most royal hue, dark almost to blackness in the style branches and about the golden veination that gives the flower its name. In the seedlings that I now have the color is less intense, as can be judged from the illustration, but even so the effect is pleasing. The golden yellow veins that make the signal of the falls are clearly defined in most cases, but occasionally a flower comes in which they are obscured with a great loss in beauty.

Iris sp. F. P. I. 59021. (See page 131.)

This charming iris was sent out some years ago after having been raised from seeds gathered by J. F. Rock in Yunnan, China. In general habit it most resembles unflowered seedlings of *Iris clarkei* in my present collection, but one hesitates to name it until there has been some more complete comparison. The lower left-hand bloom on the plate with *Iris chrysographes* is characteristic of its general style and carriage, which is more like that of *Iris forrestii*. As there are several iris species from this same region noted by Dr. Handel-Mazzetti in his book, *Naturbilder aus Südwest China*, for which no descriptions have yet been seen, it is not possible that we have another species to be considered.

It is a matter of regret that we do not have illustrations of *Iris delavayi* to accompany these here given, as that is the remaining member of the series that has long been in cultivation. Unfortunately in my garden its life has been short in every case and



Lilian A. Guernsey

Iris bulleyana and Iris wilsoni

[See page 128]

in each instance it has perished without flowering. Apparently it does not find something in soil or moisture to its liking here or is more exacting in its requirements than the rest, which do well enough in the ordinary border that does not become too dry in midsummer.

Washington, D. C.

NEGLECTED NATIVES: I. MOUNTAIN
PACHYSANDRA

Pachysandra procumbens Michx. (See page 133.)

The Japanese Pachysandra (*Pachysandra terminalis*) is now widely known to horticulturalists as a ground-cover, and has undoubtedly merit for this purpose, at least when used in connection with large-scale plantings of shrubs. It is, however, too coarse and ungainly a plant for rock-gardens and other restricted areas, where individual attractiveness is more important than mass-effect. Moreover, it spreads rapidly by running rootstocks, and soon crowds out more delicate things which lie in its path.

One of the most notable facts brought to light by plant-geographic studies is the presence in eastern North America of numerous species closely related to those of eastern Asia; and the genus under discussion furnishes a good example. Tucked away in the southern Appalachians and adjacent physiographic provinces there occurs a member of that genus, appropriately named the Mountain Pachysandra (*Pachysandra procumbens*). This was discovered by Michaux in the course of his travels in this country in the late 1790's, but has never become widely known to botanists.

When the writer took up the study of the relations between plant distribution and soil reaction (acidity and

alkalinity), a special effort was made to locate such rare members of our native flora. The manuals of Botany give the range of the Mountain Pachysandra as from Florida to Louisiana and West Virginia,¹ as though it were a widespread plant; but for some time no clue to its exact haunts could be obtained. Ultimately, a mention of its occurrence at Somerset, Kentucky, was noted in an old account of it, and on visiting that place and making inquiries at the High School as to possible locations for it, a large colony was found a mile and a half north of the town, near the waterworks. The plant abounds there on rocky slopes, being most at home in the woods, but persisting even where the trees have been cut and the land pastured. The underlying rock is limestone and the soil reaction circumneutral, that is, either slightly acid or slightly alkaline, but never far from neutrality. Later other occurrences were discovered, from this point southward nearly to the Gulf of Mexico, all situated on wooded rocky slopes along streams; but in many apparently favorable places it could not be found, so that the reason for its distributional behavior remains a mystery.

In many respects the Mountain Pachysandra is decidedly superior to its Japanese relative from the horticultural standpoint. Its rootstocks elongate but slowly, so that it stays where it is put, increasing by seedlings where conditions are favorable. Its evergreen leaves are of a soft gray-green color, mottled with brownish green. In earliest spring it produces directly from the rootstock three-inch spikes of white flowers with dull pink anthers which, though individually small, are numerous enough to be conspicuous, as brought out in plate

¹In a German serial devoted to plant geography, Die Pflanzenreale, R. 1, H. 7, K. 70, 1927, there is an article by Pax on the distribution of the Box family, to which the Pachysandras belong. The range of the present species is mapped as extending from

Tennessee to New Jersey, but there is no evidence that this is other than an instance of carelessness in handling American geographic data, such as Fernald has pointed out in Science, v. 68, p. 145, 1928, to occur elsewhere in that serial.

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Lilian A. Guernsey

Iris F.P.I. 59021 and Iris chrysographes

[See pages 128-130]

on page 133, reproduced from a photograph taken in the writer's garden in March, 1929. Such a ground-cover, which prefers shady places, is not particular as to soil, is hardy far north of its natural range (at least to latitude 42°), bears attractively colored leaves, and blooms at such an early season as to permit its combination with *Chionodoxa*, *Muscari*, and *Scilla*, would certainly seem desirable for horticultural use. Yet it is rarely seen in our gardens, perhaps largely because of our tendency to prize more highly something that comes to us from a distant land, a tendency by no means discouraged by nurserymen. May this article lead to its more extensive introduction.

Washington, D. C. E. T. WHERRY.

NEW DAFFODILS

As long ago as 1925 the Midland Daffodil Society included in its annual report an exquisite picture of Tapin shown by its originator, Mr. J. L. Richardson, in the show for that year. There was no note to tell how long he may have had it before showing, but even yet it is still unknown to any degree in this country. It was one of a fine series of daffodils bred from Cleopatra and White Knight, both examples of exquisitely formed and textured flowers. In it one finds the perfection of substance and smoothness characteristic of each parent and the breadth of petal and pattern that makes them so remarkable. The color is an unclouded opaque white in the perianth and an equally serene lemon yellow in the long and little-fluted trumpet.

The other flower in our illustration is White Conqueror, originated by the late Mrs. R. O. Backhouse. There is no note of its pedigree. Here it has made an excellent plant of great vigor and free-flowering habit with broad somewhat blue-green leaves and tall upstanding flower stalks. The flowers are not quite so white as those of the remarkable Beersheba

but are white enough to satisfy the most fastidious, and come a little later than those of white trumpets, flowering here with Quartz and Eskimo rather than with the early Beersheba and Nevis.

Washington, D. C.

PEONIES—RANDOM NOTES

Through the kindness of Professor Saunders we are able to record in this issue a flower of his hybrid "Argosy" bred from *Paeonia lutea* and a tree peony. This has been illustrated before in Horticulture but is so striking a bloom and so great an achievement that it is well to show it again. As compared to *lutea* it is a huge flower but is not so large as some of the tree peonies themselves. The color is a delightful yellow with a red purple flame at the base of the petals, seen plainly in the illustration, which shows the flower in its almost full condition.

This, to the editor, is the loveliest stage in peony unfolding. Here one has all the feeling of the sphere of cupped petals that surround the stamens and carpels, with enough of opening to show the width and depth of the flower itself. To his eye, the single and semi-double flowers have far more of grace and beauty than the doubles, so many of which have such strange medleys of petal forms. Of course one understands the process of doubling in a peony, the gradual transformation of the stamens and pistils, but in many of the full double flowers, petals large and small are found throughout the entire mass, in curious disarray. So it was with perhaps a prejudiced eye that he walked about the tables where singles were shown.

Beside the lovely table of tree peonies, Professor Saunders had tables of most interesting seedlings, hybrids between species. Many stopped at the table with the gorgeous red flowers resulting from crosses between *officinalis* and *chinensis*. Challenger (No. 3235) showed about eight broad petals, deep red crimson, over which were



E. T. Wherry

Pachysandra procumbens

[See page 130]

laid the stamens in a huge puff, with dull purplish red filaments and golden anthers. No. 1165 was much like this, but had fewer stamens with white filaments that made a striking pattern as they laid flat over the crimson petals. There were others in this set of great interest, but fancy turned to No. 3738, in which the petals were far from overlapping and were deeply incurved so that one had a cup-shaped flower. An interesting form this, one of the pleasant shapes and patterns which are so different from conventional standards that they rarely have a showing.

Of the seedlings of Otto Froebel crossed with *sinensis*, No. 1173 seemed most delightful with its beautiful bowl of nine overlapping petals and a puff of stamens with pink filaments and gold anthers about four gray-green carpels with pink stigmas for a crest. The flower itself was of that lively pink that is found only when a bit of yellow underlies the pink. No. 3733 of this same series seemed most beautiful at first, but as the flower aged the petals reflexed more and more as they so often do in tree peonies, until the center of stamens seemed a veritable cockade of white filaments tipped with yellow. The petals here are lighter in color than in No. 1173, a rather delicate light rose-pink with the same hint of yellow underneath.

In striking contrast to these were the flowers of the other crosses. From *macrophylla* and *sinensis* came a series of flowers with widely spaced petals that showed a strong tendency both to reflex and to become revolute. Nearly all were of a curious pinky-white color with a deep red purple stain at the base of the petals where the stamens were inserted, the coloring staining as well the bases of the filaments. In the center sat the gray-green carpels with deep purple stigmas. The flowers of some of the clematis hybrids came to mind as one looked at these plants and the thought passed that possibly in our pursuit of

orthodox peony forms we may have passed by other patterns in peonies that are worthy of saving.

Of the *paradoxa* by *sinensis* crosses little need be said. There was a tint of amaranth in the reds that is too familiar in peonies to need mention.

It was a pleasure to see the satin pale flower of *tenuifolia rosea* from another exhibitor, whose name has escaped the hurried notes taken at the time. Old *tenuifolia* with its glowing flowers and finely dissected leaves has always been a favorite, but this flower had a delicacy and transparency that was strangely lovely.

Another interesting bloom was of *ificinalis striata elegans* in which the guard petals were a deep rose-red more or less blotched with flashes of dark red, surrounding a deep puff of stamens in which the filaments had become petaloid and the anthers almost entirely so, showing only a fleck of gold on the edges. In the very heart were the pale green-gray carpels with delicate rose-pink stigmas.

In the more orthodox field of singles and Japanese flowers, so many of which came from Mr. Peyton, one must mention the old familiar rose pink Tokyo, Some-ganako, Tomate-baku, Topaz, Imperial Queen, Ama-no-sode, Fuyajo and Yoochi-no-tsuki which received a first prize for its lovely flowers with warm pink-white guards, and full cockade of petaloids white tipped with pink and curiously shaped and pointed.

If the editor were a good reporter, he would have seen more and managed a more representative report instead of following merely the dictates of his fancy in such matters.

THE CRESTED IRISES

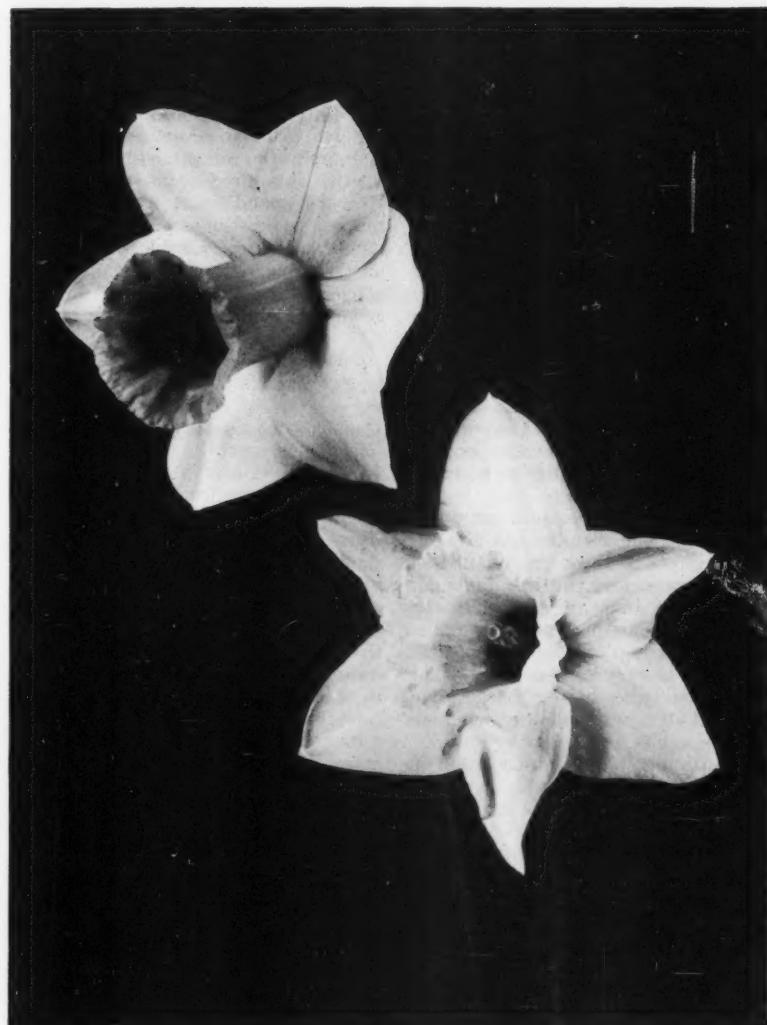
Much is being heard about Bearded Iris, and the Beardless species get some notice, yet the small but distinct group of Crested Iris is little known in gardens. Our own *Iris cristata* is the best example of the group, and so well known that the others may be

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Lilian A. Guernsey

Narcissus, Tapin and White Conqueror

[See Page 138]

compared with it. This is particularly a rock-garden plant, and its quaint habit of running about is quite entertaining here or in a wild garden. The flattened lacy lavender flowers in May are particularly decorative for wild effects, for the Dwarf Bearded are too heavy and snug for any place except formal planting, and there are few dwarf species of the Beardless that produce flowers rather than a field of grassy foliage. The airy butterflies of this Crested are well above the foliage in a way to catch the eye and arrest the fancy.

When you have been touched by the grace of this species there comes the desire for the other kinds. There is some minor color variation in *I. cristata*, and the rare pure white form is very choice. Lake Iris (*I. lacustris*) from the Great Lakes is a tiny edition, differing mostly in being smaller and more slender. It is quite at home in the sandy rock garden.

For other crested species we must visit Asia. The Slender Iris (*I. gracilipes*) grows in thick grassy tufts of narrow leaves, and the tiny lavender butterflies in June are several to the wiry stem. This in every way is the gem of the group for the rock garden. The Roof Iris (*I. tectorum*) is a giant *cristata*, but with flowers borne on a branched stem more than a foot high in June. The foliage is sword-like, but limp, and it dies mostly away in winter. The plant seems perfectly hardy at Boston when the drainage is good, and it increases rapidly. For beauty it surpasses the Intermediate Bearded Iris. There is some color variation in the lavender, and the pure white is the most effective low white perennial of June. The Himalayan Iris (*I. milesii*), from the Himalayas, is a gigantic *tectorum* of the bulk of Tall Bearded sorts. It seems to be as hardy as *I. tectorum*, but must have good winter drainage.

Two other species are not hardy here. The Fringed Iris (*I. japonica* or *fimbriata*) has thick evergreen foliage, the flowers several on a slender wiry

stem, like a larger *I. gracilipes*. It will not stand much freezing, yet careful covering of leaves will save it at Boston, but where frost is but slight it should be as easy as *tectorum*.

One species from China (*I. wattii*) is really tender, but it has been grown in California and should be tried more widely. All these species, save the last, are in the collection of Iris species at the Botanic Garden of Harvard University and seem to have possibilities as distinctive garden ornaments. Iris hybrids between groups are possible. Can there not be an attempt made at breeding in this group and give the Bearded a rest?

STEPHEN F. HAMBLIN.

Botanic Garden,
Harvard University.

Viburnum dilatatum Thun. (See page 117.)

Among the shrubs that are conspicuous for the brilliancy of their fruits and foliage in the autumn, one should always recall this excellent plant from Japan which resembles some of our native species in many ways but has brilliant red berries that persist in beauty until hard freezing darkens them. The foliage is much more leathery and tough than our native plants and assumes a more robust coloring with deep reds, russets and purplish bronze as the predominating tints.

To my mind, however, it comes under the same condemnation that spoils so many of the viburnums, a rather sickening odor from the pollen when the plants are in full bloom. For that reason, it should be kept at some distance from the house, in shrubberies where it can develop its full stature and spread with as little interference as possible. It will make eight feet in height with ease and show almost as great a spread with branches feathered to the ground and each twig nodding with the weight of the scarlet fruits. As it is essentially upright in growth with many strong

July, 1929

THE NATIONAL HORTICULTURAL MAGAZINE

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vertical lines in the main stems, it makes a pleasant contrast to such plants as the spreading cotoneasters with their more fountain-like lines of growth. As its leaves are far larger, it also affords a contrast in surface texture with their finer and more delicate leaves.

Like other viburnums, if this is grown from seed, the seed should be planted out of doors where it will freeze during the winter and where it may be allowed to lie dormant a whole season if it feels so inclined.

Washington, D. C.

FRAGRANT HYBRID GLADIOLUS

Richard Diener, formerly of Kentfield, now Oxnard, California, some ten years ago started breeding work toward the production of fragrant hybrids. About a dozen South African species were developed from seed and tried, most of which proved to be of very delicate constitution.

Only one of these, *Tristis*, proved amenable when bred with the known large-flowered varieties Prince of Wales and Mrs. Frank Pendleton. From these crossings, the named varieties as pollen parents, one hundred and fifty seedlings were obtained of which only one-third were colored, the others being white and cream on the order of *Tristis* but with larger blooms, having the same foliage as the species. The Prince of Wales lot gave a higher percentage of fragrant hybrids than the other one.

The colored seedlings have broad leaves as in the usual hybrids known to-day, the blooms facing side-wise (not opposite), as in the species, with a color range through pale pink, lilac, lavender, scarlet, coral, salmon and intermediate shades and tints. Some of these are as fragrant as Freesias, having a scent apparently compounded of Daffodils, Freesias and cinnamon. Others have only a faint fragrance (usually the stronger colors); and still others have none. Their fragrance is stronger at night than by day.

Some have spikes four feet in height and the diameter of blooms in some instances goes over five inches. Almost all of them have a deep maroon spot or stripe surrounded by yellow, in the lower petals.

They are strictly winter flowering in habit, and will bloom from December to February without any forcing, if grown at a temperature of 50 to 60 degrees. The bulbs throw numerous spikes, some as many as six. The flowers are well placed on most of the spikes. It is believed that this strain of hybrids will fill a long-felt want for winter cut flowers in the colder climates.

It is apparent that Mr. Diener has a real start in the right direction. He is continuing his work to better his present results toward size of bloom, height of spike, blooms per spike, number open and the formation of larger cormels. The latter seems to bother him most, as he states his present hybrids produce cormels about like the species, about as large as bird-shot, and any one harvesting stock can readily realize that to grub for cormels of that size would prove almost a hopeless and surely a thankless task.

One may expect, before very long, to see and enjoy some of these wonderful fragrant hybrids.

CHAS. E. F. GERSDORFF.

Eleagnus pungens Thun. (See page 117.)

This evergreen eleagnus from Japan is a shrub for the South. It is hardy at Washington, D. C., and presumably would fall into that class of shrubs that are hardy in protected places as far north as New York. Where it can reach its full size and stature, as it does in the South, it will make a huge plant, even to twelve feet in height and even more in spread, with strong shoots that rise from the crown with amazing rapidity in a single season. During the first year they are often rather sparse and angular

with bare lateral branches that are often spiny from the short spur-like growth. After the first year, however, the splendid dark green leaves develop in full size and make a fine mass of foliage, which shows the silvery under surfaces of the leaves when the wind stirs.

The interesting feature of the plant in the northern limits of its hardiness is the flowering, which comes in November and continues until frost brings it to an end. The individual flowers are a rather dull white more or less covered with rusty scales that make them even duller, but they exhale a delicious scent, which fills the air on any warmish day that November may afford. Coming at this time, there is no opportunity for their fruiting in this region, but where the winters are milder these dull flowers are followed by quantities of fruits the size of a small gooseberry but more ovoid in shape. The color is a curious dull red that has a coppery sheen from the little reddish, almost scale-like dots on the surface. When I saw the plants in Savannah in February, the fruits hung thick along the boughs as if such birds as had passed cared as little for its flavor as do men. The taste is a rather puckery dull sweetness that does not intrigue one to further tasting, but possibly if one must have preserves and was allowed a dash of lemon and root ginger, the whole might be better than the fresh fruit in the hand.

Coloneaster dielsiana Pritz. (See page 141.)

To the layman's eye this species may seem rather like *Coloneaster divaricata* illustrated in our last issue. As the plants have grown here, there might be some value in that argument if one considered only garden values, for there is a striking general similarity in growth and coloring. This plant has much less shining leaves which differ in shape and in the depth of the veining, which shows clearly enough in the

illustration. The berries are more rounded in shape and are differently borne on the short stalks. In any case it makes a charming shrub with brilliant autumn coloring in the leaves before they fall. Like *divaricata* and so many of the other species that are most effective in fruit, the flowers in this species are not showy, having rather pretty pinkish calyces and small dull white petals.

This comes rather quickly from seed and will root as well from cuttings of not too ripe wood in late June. It should be planted in a final place where it will have ample room to develop without much pruning as in this way it will develop the arching growth of twiggy branches that are so characteristic of many of the cotoneasters.

Washington, D. C.

BUDDING FOR BEGINNERS

Budding is one of the most useful means of propagating varieties of tree fruits and many ornamental woody plants that do not root readily from cuttings. Budded trees are essentially the same as grafted ones, and budding is really a form of grafting by the use of a single bud cut from a twig. The season for doing the work, however, is at a time while growth is active rather than during the dormant season, when grafting is usually done.

For apple, cherry, pear, plum, quince and ornamental plants such as rose and lilac, one-year-old stocks, usually seedlings, are planted in early spring about 5 to 10 inches apart to be budded later in the season. For peach and other kinds that make sufficiently rapid growth, the seed is planted where the young seedlings are to be budded, as they get large enough the first summer.

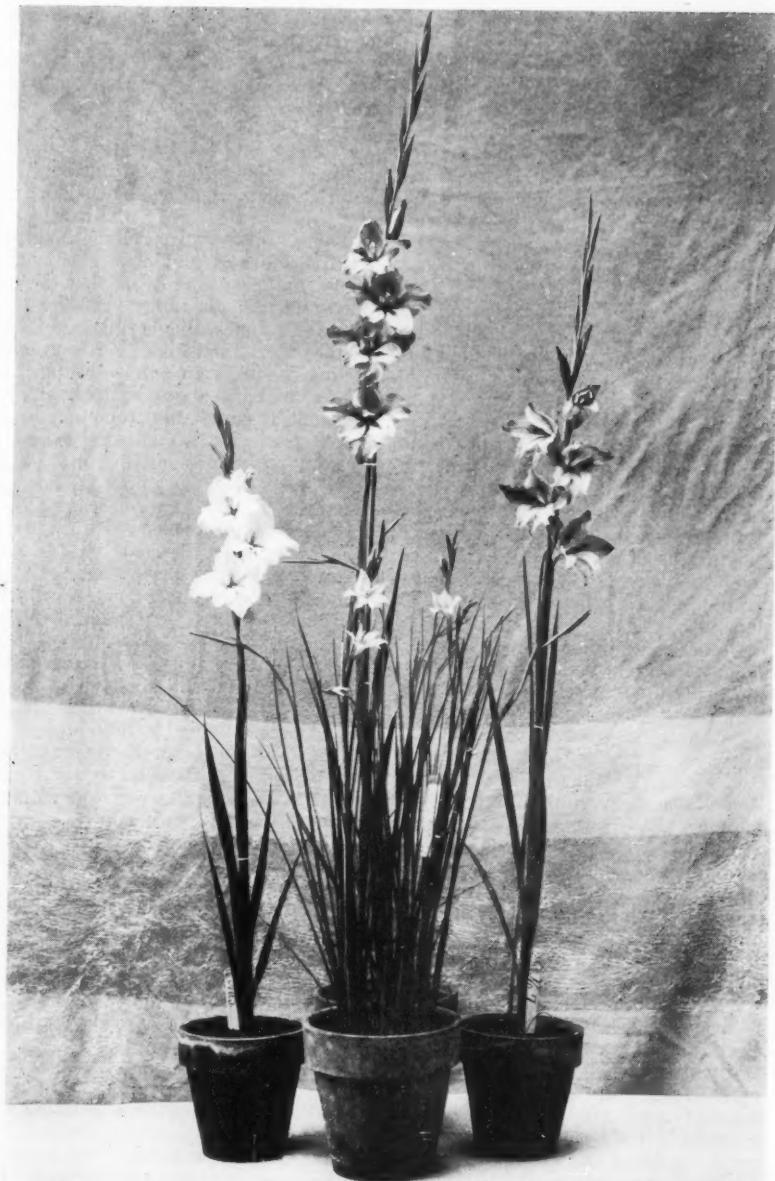
The plants are given good culture to encourage vigorous growth. The best size of stem for budding is about one-fourth to one-half inch in diameter, although larger or smaller stems can be budded. Those of larger size are not as desirable because of the thicker bark and the difficulty of keeping the inserted buds tightly in place.

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Fragrant Gladiolus

[See pages 137, 142]

The buds are usually placed on the stems within a few inches of the ground, although special reasons may make a lower or higher position desirable. For example, by budding seedling rose stocks on root tissue at the base of the stem rather than higher, much future trouble may be avoided from sprouts arising below the union.

The buds of the variety to be propagated are branch buds taken from wood of the current season after growth has progressed so that those on the middle portion of the twig (which are the best for this purpose) appear plump and fairly well matured. The buds near the tip of the growing twig are discarded as they are usually not sufficiently developed. The leaves are trimmed off leaving about one-fourth inch of petiole to protect the buds and facilitate handling. The twigs bearing the buds selected for use, called "bud sticks," must remain fresh until they are used. They may be kept in good condition for a day or two by wrapping them in damp cloth or paper.

The usual time for budding is July, August, or early September while the stocks are in active growth so that the bark can be lifted easily and after the buds to be inserted have reached a sufficient stage of maturity. Some stocks such as Mazzard cherry and French pear may stop growth by late summer, allowing but a short season, while others may be budded during a period of two or three months. It is important that the bark separates easily from the wood. If it must be lifted forcibly, presenting a dry stringy appearance in the cambium layer, the buds are not likely to grow.

The form of budding known as "shield budding" is most generally used. The bud is pared from the twig so as to include the surrounding bark in the form of a shield. It is inserted under the bark of the stock plant which has been prepared by making a cut along the stem and another across it, then raising the bark along the cut edge. When put in place, the

cut surface under the bud fits snugly against the wood of the stem. The operation is completed by tying tightly with several wraps of twine or raffia above and below, leaving only the "eye" itself exposed. These details are shown in the illustration. Some budders remove the small bit of wood from under the bud while others leave it.

There are several other methods of cutting the bud and stem, one very simple and easy way being that developed and used for many years by the late J. F. Jones, nurseryman of Lancaster, Pa. Instead of cutting and raising the bark to admit the bud, a section of bark about an inch and a half long is pared from the stem by a single downward stroke of the knife, exposing, but not cutting into, the wood beneath. The upper portion of the piece of bark is cut off, leaving the lower portion attached to the stock. The bud to be inserted, cut as for shield budding, is placed against the exposed wood of the stem as shown in the illustration. The flap of bark left on the stem serves as a support for the bud until it is tied. Muslin that has been dipped in melted beeswax and then torn into narrow strips about eight inches long is preferable for tying this style of bud, covering the entire wound with only the bud exposed. Raffia or other material may, however, be used successfully.

The bud is intended, ordinarily, to remain dormant the season it is inserted and grow the next spring. The bandage is left in place two to five weeks to allow plenty of time for calousing (the first stage in the process of forming the union), but it is removed or loosened before the stem is constricted unduly by the expansion due to growth.

The stock is cut off just above the bud the following spring about the time growth starts. Timely attention must be given during the early part of the season to remove all the growth except that from the inserted bud. A bud so grown may be expected to

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Lilian A. Guernsey

Cotoneaster dielsiana

[See page 138]

attain suitable size for transplanting to its permanent location in one season.

A variant in the process of developing budded plants often practiced in the South where the long growing season permits, is known as "June budding." By this plan the budding is done as early in summer as the stocks and buds are in suitable condition.

During the succeeding month or two the stock top is cut back gradually to encourage the inserted bud to start growth. Later in the season the entire top of the stock is cut off. Under good conditions these buds make growth enough the same season to prepare them for transplanting. Such June buds, however, may be injured by severe freezing the first winter because of their weakened condition due to the late forced growth. Consequently, except in the South, the first type of budding described is the one most in use.

GUY E. YERKES.

In the article which Mrs. Fox has prepared for this issue she records the directions for propagating the lily and in the closing part of the paragraph we find this sentence: "The stems of the lilies are buried under a light covering of humus in a shaded spot where the direct rays of the sun do not penetrate, and by autumn in the axil of each leaf a bulb will grow which can be planted as described above." This from an Arabic Farm and Garden Book!

Compare with this the note that follows, taken from Sir Arthur Hort's translation of Theophrastus "Enquiry into Plants," II, 2-1:

"Of undershrubs and herbaceous plants the greater part grow from seed or a root, and some in both ways; some of them also grow from cuttings, as has been said, while roses and lilies grow from pieces of the stem, as also does dogs'-tooth grass. Lilies and roses also grow when the whole stem is set. Most peculiar is the method of growth from exudations (bulbils); * * * "

This is the same practice that is seriously urged for many lilies to-day, perhaps specially for the *candidum*, which was the subject of the Arabic note, and for *testaceum* its hybrid.

How curiously it sounds to have lilies and roses paired as growing from cuttings! If you have the courage, now is the time, when the *candidums* are past, to pull out the stem and put it in some moist, but not too moist, shaded spot, covering with gritty soil perhaps rather than humus, to await the formation of the little bulbs along the stem and as you do it remember that this has been done by many gardeners in many lands.

FRAGRANT GLADIOLUS

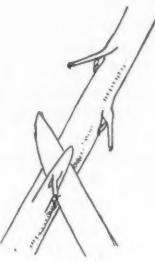
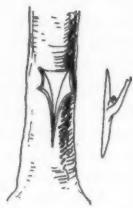
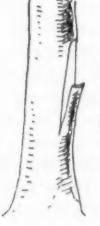
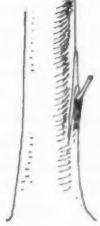
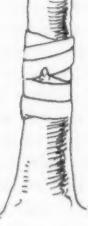
There was not room under the illustration on page 139 to give the parentage of the several gladiolus. In the center foreground is a pot of *Gladiolus tristis*, a scented species. In the background left is one plant of a seedling resulting from a cross of Prince of Wales and *tristis* and two plants, with darker-toned flowers, seedlings from Mrs. Frank Pendleton and *tristis*.

ACKNOWLEDGMENT

In Mr. Mulford's biographic note on the life of Dr. Walter Van Fleet no mention was made of the share that The American Rose Society played in the dissemination of the plants turned over by the Department. This was not an intentional oversight and is regretted.

PLANT WANTS

At the earnest request of some of our members we have decided to follow the example set by the New Flora and Sylva and open our columns to our readers who may want to make known to other readers their particular desires for new plants that they can not find in commercial catalogues. The name and address of the member followed by a list of his or

			
KNEE HELD DIAGONALLY TO AID IN MAK- ING STRAIGHT CUT	STEM AND BUD PRE- PARED FOR INSERTION	BUD TIED IN PLACE	STOCK CUT OFF FOLLOWING SPRING
			
BARK PARED TO EXPOSE WOOD UNDERNEATH	BUD IN PLACE	BANDAGED WITH WAXED MUSLIN	

her wants will be printed in the back pages of each issue so that readers may communicate with each other directly. In case the lists are too long, or contain plants already in commerce, the editor reserves the right to shorten or alter them correspondingly.

SUMMER PRUNING

Recently, in visiting a lovely Virginia garden, the mistress of the place was seen snipping branches here and there as she passed through the garden, returning the pruning shears to her garden pocket when decapitations were not in order. Her thought was chiefly the removal of branches that overhung the garden paths, but the thought of midsummer pruning might be carried much farther than this with profit both to plants and gardeners.

No one seems aghast any longer at the severe pruning that is necessary to keep climbing roses in good condition and orchardists may vary in opinions, but even so feel no dismay at the programs for summer pruning which have to be undertaken in some gardens for the proper development not only of the tree trunk and branches but the fruiting spurs which are so essential to fruiting. The continued, perhaps one might even say continuous, pruning of some of the deciduous hedge plants is summer pruning of another sort, indeed, all these examples might be considered rather special applications of the general pruning practices. In spite of these several examples of the use of the shears in midsummer, there is less summer pruning than there well might be, if one will consider what can be gained by seeing what is being done.

In pruning there are two major ends to be kept in mind. In the beginning, people are chiefly concerned in directing the growth of the main stem and branches so that a strong and adequate framework will be developed. After that one is con-

cerned in the removal of old wood in order that new wood may take its place and so keep on the tree or bush a proper amount of wood of the right age and development for the production of flowers or fruit. After this the questions that come to hand are essentially aesthetic. It is with these that we are concerned here.

Winter pruning makes an opportunity for the operator to study the bony structure of the plant, to examine and modify its framework. Summer pruning gives an opportunity for the study and modification of the masses, since the foliage largely conceals the lines of the branches and stems.

As a people we are not likely to pay particular attention to the characters of growth that mark out one individual plant from another, even within the same species. The Japanese have developed a much more arbitrary, almost conventional, feeling for the characteristics of the many plants that they use in their garden developments, with the result that by pruning they accentuate the natural characteristics, just as an artist in other forms of expression is able to accentuate the passages which he feels of primary importance. Going to a Japanese nursery which supplies plants for the development of Japanese gardens in the landscape style the American is constantly amazed at the appearance of some of the plants, which to our eye seem mutilated and decrepit.

Trees of size, to be transplanted, are grown commonly enough in the Japanese nursery and are moved about without much thought of the undertaking or of the after care as they have been prepared for this through the years of their development. Pruning of both roots and tops is practiced, with the result that trees of considerable dimensions can be moved into a new garden and give it the appearance of age that is so desired. The pruning of the tops of the trees is of particular interest in that while it has been devised in order to reduce

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the top and so make further transplanting less dangerous, it has been carried out in a conventional manner so that the individual qualities of the plant are made conspicuous. As an example, the pine may be cited. This tree is everywhere beloved for the lateral development of the branches. By careful pruning growth is directed into the branches that are to form the structure of the tree and these by tying and weights are given any particular position that is desired. Pruning, after this, is directed toward the development of the masses of foliage along the boughs. For this pruning is begun when the new shoots of the year are about six inches long. One by one they are cut off so that only three or four pairs of needles are left. This is an immense labor and one that is not likely to be adopted in this country but it illustrates the points that have been made, first the direction of the framework of the tree and then the development of the foliage masses, by pruning them until they were made thicker and more compact than they could ever have been if left to their natural growth.

Pruning of this sort is largely applicable to many conifers in use in gardens. A seedling pine came up in the writer's flower garden and more for amusement than anything else it was subjected to repeated prunings with the result that it developed into a large round-headed tree very much like the plants formed by Mugho pines. It was interesting to discover also that under this treatment the plant had repeated seasons of growth and was not content with one growing period in the spring. The time came, however, when it outgrew its quarters and then the lack of root pruning was most apparent, for on lifting it with what seemed to be a very good ball of earth the roots system proved so slight that the earth fell away entirely and the plant soon died without the least chance of recovery, even though promptly given other and more severe prunings to reduce the bulk of the

top. If the roots had been cut as often as the tops it is not unlikely that the whole mass of the soil might have been filled with them and the transplanting might have been successful.

In summer pruning one is too often tempted to use hedge shears. This is particularly unfortunate unless the plant that is to be trimmed needs a hedge-like surface to show its true character. It requires considerable persistence to use pruning shears and clip the ends of twigs that have exceeded their allotted space. It can be done, however, and the results justify the work in time. This is particularly true for large-leaved evergreen plants such as aucubas and hollies, which are actually disfigured unless they are pruned by hand.

They even more than the conifers that are most often found in gardens are greatly improved by summer pruning, especially in cases where plants are likely to outgrow the allotted space. Trees are often used in foundation plantings which should be given larger quarters, or better still, should be ostracised from such uses. Even the retinosporas, which are most commonly found, outgrow their space in time if not pruned regularly. These, as they come from the nursery, have been sheared time and again until they have assumed the density and character of little trees for Noah's Ark. If they are allowed to grow freely for a season or two until the stem and branch character of the plant can be determined, the owner can then proceed to a better style of pruning in which the branches are shortened one by one with pruning shears and the general contour of the plant kept within bounds and still preserve the habit and outline which are never realized in the sheared plant. It is even possible to remove the leader, from time to time, in order to reduce or check the height and in this way keep the plant as a foundation plant. If this general pruning by the "plucking" method is started while the plant

is still small and carried on consistently through the years the results will be better than if the work has to be attempted after the plant has grown beyond bounds.

PRIMULAS

A bowl of the new giant yellow *Primula Florindae* and the rich violet *Primula crispata* proved one of the most interesting exhibits at a Chicago suburban August flower show. Both have proved of comparatively easy culture and August primroses are a novelty to most gardeners. They are excellent plants for shady situations where a supply of moisture is available.

P. Florindae is more attractive cut than in growth as it is rather coarse and lacks the delicacy and grace of other species. Its leaves, described when first offered as resembling those of the marsh marigold (*Caltha*), thoroughly justify this characterization. The flower stem with a large umbel of deep yellow flowers is rather stiff and not as fine as *P. sikkimensis* to my way of thinking, but the color is beautifully clear and pure and it has a fine delicate fragrance.

P. crispata, one of the Capitata section, has a velvety richness of color with the stems covered with white farina. The head of bloom is somewhat suggestive of one of the dark-colored annual scabiosas.

Primula Littoniana, with which gardeners as a rule have no luck, at least that is my experience, bloomed finely, resembling a miniature tritoma or kniphofia. A great variety of rare primroses were shown to Chicago gardeners by Mrs. Percy Armstrong of Glencoe, a primula specialist. The candelabra types were very fine, particularly the beautiful coppery red Asthore, the deeper Aileen Aroon, and the brilliant Red Hugh.

S. R. D.

HONESTY

Honesty, known as *Lunaria biennis*, or "Money," as it is sometimes called by old-fashioned gardeners because of the silvery appearance of the dried seed pods, is not nearly so well known among plant lovers of to-day as it deserves to be.

The flowers have little value in the garden, and, although the plant is said to resemble Sweet Rocket in manner of growth and character of bloom, it is not nearly so pretty as the latter. Like Rocket in habit as well, it sows itself freely and the seedlings show varying shades of purple. There is also a white form which is thought desirable.

But the real charm and value of Honesty is for the inner partition, which bears the seeds and is quite ripe by mid-summer. They are then cut and dressed, the outer valves removed, revealing the white silvery septum inside. These bunched together make the most decorative and charming of winter bouquets. Tucked in one's grandmother's quaint flowered vases, the effect is incomparably lovely.

After one has plants established, maintaining a yearly crop of Honesty is a fairly simple matter, for the self-sown seedlings one finds throughout the borders in late fall, transplanted, quickly develop into stocky plants for producing the much-coveted "Money" seed pods.

Persons who have never experienced the delight of growing Honesty should lose no time in ordering seed from some reliable source, sow out of doors in May in an open sunny situation, in ordinary soil, and prick off as soon as they may be handled, placing 4 to 6 inches apart, where they may remain until autumn. In making a selection for their final quarters, it is well to choose a well-drained position in the garden.

MARY MC D. BEIRNE.

Ashland, Va.

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